ILLINOIS

March, 1943

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ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY
PALMER HOUSE, CHICAGO, MAY 18, 19, 20, 1943

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The Illinois Medical Journal

March, 1943

VOL. 83, NO. 3

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Philip H. Kreuscher, Harry Culver.

Editorials

A TRIBUTE TO THE MEDICAL PROFESSION

One of the best tributes to the medical profession which has come to our attention appeared as an editorial in the Grant County Herald, Lancaster, Wisconsin, under date of January 13, 1943. The editor, Mr. A. L. Sherman, in his "Remarks to a Young Friend Soon to Graduate in Medicine" presented first, a paragraph from the dedication to "Underwoods" by Robert Louis Stevenson:

"There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarelier still, the clergyman; the physician almost as rule. He is the flower (such as it is) of our civilization."

Then follow the complimentary statements to his young friend which we present in full:

"You are, my young friend, on the brink of your career. Whether or not your career will be great or ordinary depends very much on yourself. You will, I understand, finish medical school this year. After that Uncle Sam will want you for a while. This will be fine experience. Afterwards and in the course of time, you will come back to private life, "put up your shingle", and begin to practice somewhere — maybe in the old home town, which you like so much and where you know everybody and are liked just for yourself. This will be a help in some ways and in other ways a handicap — people will find it hard to realize that the little boy they saw at play so short a time ago, is now a grown man and a full-fledged physician. Nevertheless, they will have an affection for you because they knew you when you were young. People are like that.

"But wherever you go to practice you will be among human beings and will have a great opportunity for service. I hope you will be paid and well paid for what you do and I know you will try at all times to earn your money. Nevertheless, the rewards you receive — the great rewards — will not be monetary, but spiritual. The monument you will have in that far distant day when you leave this world will not be stone — it will be something in the memory of the many you served — the men and women, the families, the boys and girls — the people of your clientele. They will remember you for what you did for them and will be grateful to you.

"The reason, of course, is because of the peculiar and extraordinary relation which exists between the physician and his patient. You will see people as others rarely see them — when they are ill and despairing and need help desperately. You will not only be a healer of bodies — you will be a healer of souls. You will find the psychic side of your ministration of importance equal to the physical — ofttimes more so.

"In ministering to human beings you will find them with the bars down and without glamour — there will be none of the little ordinary masks

and pretenses we all wear to meet the world. Yet even though the fellow-man you serve may be helpless, even undignified, you will find something noble and lovable about him, something that transcends and is beyond any definition of the physical, something above the anatomical and that defies material analysis. He is a human being.

"If you did not feel this you would be no true physician and would be wasting your time as a doctor. Nor would you be much good to the world.

"I remember, many years ago, hearing a young medico tell me he was "out for the money." The money was there to be made and he was going to "get his." "I would cut a man's head off for five dollars, if he paid me for it," this young scoundrel was fond of declaiming. His crass attitude horrified me and I read with pleasure a few years later that he had been prosecuted and punished as a particularly venal sort of quack. If ever a man's rotten and cynical philosophy caught up with him, this was a striking example.

"In conclusion let me say that I have kicked around this world for over half a century. I have always studied people, remembering the advice of the sage that "the proper study of mankind is man." I can say with Stevenson, that no calling in the world has a higher opportunity for human service than the true physician. This is not to say that all the doctors one meets are true and great, or that many of them are anything else but mediocre. But when you meet a good one — a great humanist, as well as a great physician — how his light does shine!

"In far flight and at long last, I see you — in mind's eye. You will be wearing spectacles, because your once keen sight will be dim. Your shoulders will be rounded and your step slow, due to the advance of the years. Your hands

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will be gnarled — instead of white and supple, as they now are. And maybe your breath will be a bit wheezy. We will say nothing of wrinkles, of which you will doubtless have plenty. All these, and the wear inside, will be accolades of honor. You will have spent yourself in human service — which I can assure is the greatest way possible to spend a life. And you will be tranquil, happy — not caring much what happens to yourself — you will have done so much for others.

"So you're going to be a doctor?

"Well, go in and win, my boy — and may God bless and keep you!"

We do not know Editor Sherman, but it is quite obvious from his fine editorial, that he is a friend of ours, and that he has made keen observations over a considerable period of time of men who have devoted and consecrated their lives to relieving the sufferings of humanity.

He has shown in this editorial that although medicine is not the "bed of roses" many believe it to be, to enter this profession one must be endowed with those qualities which are essential to the accomplishment of the aims and purposes of a true and successful physician. He realizes no doubt, that to be successful in this calling, the young physician when he receives his diploma and license to practice, is just starting his studies. The successful man in medicine must constantly study, attend medical meetings and associate freely with his confreres throughout his professional career.

WAR TIME MEDICINE

With the large number of physicians now serving their country as officers in the medical corps of the armed forces, and with the limited number of doctors remaining at home to endeavor in every way possible to care for the civilian medical needs, it is quite obvious to all who know the facts that sacrifices on the part of both physician and patient are necessary. It may be impossible in many communities for people to get the same type of medical care as they have received in recent years.

The American people as well as those of nearly every other nation in the world today, are bound to undergo certain hardships. With most products now being rationed, and with the many calls for unusual types of medical services other than those primarily connected with the recognized physician-patient relationship, physicians are working longer hours and seeing more patients than under normal conditions.

In recent months many advertisements have appeared in papers and other periodicals throughout the country urging the civilian population to aid the doctors in every way possible. In many instances patients with chronic ailments are able to call at the physician's office instead of expecting him to make frequent house visits. Night calls can be greatly reduced, and the physician working long hours during the day should be permitted to get his much needed rest. No physician will object to making calls in acute or emergency conditions where a few hours delay might make a great difference in the chances for recovery, yet a large percentage of the usual night calls could have been made in the daytime.

Various plans have been adopted throughout the country to conserve the time and energy of the busy physician. In some instances physicians in turn are subject to night calls, giving others the opportunity to get undisturbed rest. Some papers publish the roll of physicians who may be called for night emergencies for the week. This matter his been discussed editorially in many papers throughout the country, showing that many civilians realize the necessity of conserving the time and energy of their physicians.

Among the many things which have come to the desk of the editor was a supplement to the February issue of the Connecticut State Medical Journal. This supplement was a card to be displayed in the office of the physician, in hospitals and in other places where it can be seen by civilians.

With the heading, "A Statement to the People of Connecticut" the following statement is made:

"It does not appear that there will be an immediate shortage of physicians in any community in this State but the entry into the military services of a large number of Connecticut physicians has created the necessity for a careful consideration of available medical service in order that it may be made to meet the demands of the care of our people. In order to aid the best and most efficient utilization of physicians' time The Con-

necticut State Medical Society makes these suggestions to the people of Connecticut.

"1. Call the physician to your home only when necessary. Go to his office when you can.

"2. Help your doctor to plan proper use of his time by calling him before nine o'clock in the morning whenever possible.

"3. Have an examination at the first sign of sickness. This helps to prevent long and serious illness.

"4. Some conditions require treatment in the hospital, but hospitals are crowded and if your physician is able to take care of you at home you are urged to follow his advice.

"5. When you call your doctor's office by telephone do not insist on speaking with him. Telephone conversations are often prolonged and take valuable time. Give your message to his nurse or office attendant.

"6. Every physician left in civilian practice is probably doing extra work in industry and public health and serving with draft boards. The demands upon his time are ever increasing. Help your doctor to conserve his health by avoiding unnecessary responsibilities for him and do not expect too many frills in your medical care these days. The population of our State has increased and more medical service has to be given by two-thirds as many physicians as we had a year ago but there are still enough to go around."

With the proper type of cooperation it seems quite obvious that the civilians of this state and the country as a whole, should receive adequate medical care in this emergency. It does, however, seem advisable for the medical profession to issue statements such as the one appearing in the above reprint from Connecticut urging the people to use good judgment in demanding the services of their physician under existing conditions. Most physicians realize the amount of time utilized each day in answering many telephone calls personally when the message could be left with an office assistant.

Again, with the shortage of nurses throughout the country, many people who previously have employed nurses for very minor ailments, can receive medical attention without a special nurse, and permit the more seriously ill to have this extra attention which they really need during the critical stages of illness.

As we have stated repeatedly in this column, it is our firm belief that the people of Illinois can receive adequate medical care during this present critical period even though the quality of service may not be entirely comparable with that of normal times. We believe that Illinois will continue to have enough physicians to give adequate medical care without having to ask licensed physicians from other states to come in for the remainder of the war period. We believe that physicians who have enjoyed the patronage of many grateful patients in smaller communities and who are not permitted to join the armed forces, should remain in their present fields and not move into larger communities most of which already have a sufficient number of physicians remaining to give needed medical care.

IT CAN'T HAPPEN HERE

Some months ago our newspapers were filled with stories of the devastation resulting from air raids over various European countries, telling of the many horrors resulting, the loss of lives, crippling of thousands, as well as the death of many hundreds of innocent civilians. In England many communities were totally unprepared and were practically helpless when it came to combatting the ill effects of the raids and endeavoring to save the lives of the many casualties.

Within a relative short time they were able to do something about it and were thoroughly organized in every community. Now with the many air raid shelters, methods of permitting rapid evacuation of large buildings and other places where raids under way are apt to trap many civilians, and with the well organized groups to render first aid treatment, evacuation of casualties to first aid stations as well as combatting fires and other consequences of the raids, they are cutting down the previous high mortality rates resulting from these raids.

Many in America feel that if they are a few hundred miles from our coastal areas they are completely secure, and they feel there is no danger even in war time of such disasters coming here. For more than a year every community has developed some form of Civilian Defense

program and has endeavored to train personnel to combat the many evils resulting from air raids.

In many states plans have been made to present courses especially in "target areas," for physicians, nurses and all others interested in the medical aspects of chemical warfare. Under the plan recommended by the Office of Civilian Defense a six hour course of instruction has been recommended.

Dr. John S. Coulter, Regional Medical Officer, Sixth Civilian Defense Region, and Dr. H. L. Pettitt, Chief of the Emergency Medical Service, State Council of Defense, are anxious to have six hour courses presented in several Illinois areas so that as many physicians as possible may become acquainted with this subject.

On January 14-16, 1943 seventy-one physicians from the Sixth and Seventh Civilian Defense Regions attended an instructors' course on "Medical Aspects of Chemical Warfare" presented under the auspices of the Office of Civilian Defense at Northwestern University Medical School in Chicago. The course was presented primarily for representatives of 15 midwestern medical schools who will subsequently organize courses in their own schools for the instruction of practicing physicians. No less than sixteen physicians participated in presenting the course which was well received by all present.

Under the recommended six hour course, two hours are to be devoted to the consideration of Chemical Warfare Agents, history and classification. The second two hour period is devoted to the pathology, symptomatology, differential diagnosis and treatment, while at the third two hour session, general protective measures are given complete consideration.

It was recently announced that gas has been used during the present war and no one can state when various poisonous gases may be used on an extensive scale, even though all nations agreed some years ago that gases should never again be used in warfare. The Illinois State Medical Society in conducting recent post-graduate conferences has devoted some time to a presentation of the subject of poisonous gases in warfare which was most interesting to all physicians in attendance.

Within a relatively short time there no doubt will be presented in several sections of Illinois, this six hour course referred to in this article, and it is hoped that many physicians of this state will attend the course and obtain all possible information on this highly important subject.

THE RIGHT SPIRIT

It was our privilege recently to read a letter from an Illinois physician now an officer in the United States Army relative to efforts which were being made to get him out of the Army and back in civilian practice. This physician had enjoyed a very good practice in his former location and following the death of another physician who was endeavoring to carry on during the absence of our good friend, an effort was being made by the many people in the community to get this man returned from the Army in the belief that he would serve his country to better advantage in giving civilian care which they believed to be of paramount importance.

This physician, like many others, was desirous of serving his country during the present war, although he thoroughly enjoyed his professional work and the esteem bestowed upon him by his many patients over a period of years. On the other hand, he thought that in the event he was returned to civilian duties, it would be unfair to many other physicians who had sacrificed as much as he had by entering service, and the reaction would not be so good if he should be singled out as the one man in his group essential at home.

He stated that he realizes there is a big job to be done, and although it is highly essential that the American people should continue to receive good medical care, his first duty now, and his principal allegiance is to his country. He believes that adequate medical care for soldiers and sailors should be the prime consideration, and that they must not be neglected. He stated that although many believe there are more medical officers in the armed forces than are actually needed at this time, he is not able to verify this opinion, and he is insistent that it is not up to him to decide this point. It is the duty of the Surgeons General and the military leaders to de-

termine how many physicians are actually needed to give the highest degree of medical care to our fighters.

In ending the letter he stated that he greatly appreciated the fact that his patients wanted him returned to his former location, but he was asking that every effort be made to get someone else to go in for the duration, and he would be happier knowing that his friends were receiving the care they need while he personally was doing those duties assigned to him in connection with the war effort.

Physicians who have voluntarily offered their services although making personal sacrifices to aid their country deserve much credit indeed. Those who remain in the field of civilian practice should carry on to the best of their ability, realizing too that they have certain sacrifices to make at home.

ANNUAL MEETING
ILLINOIS STATE MEDICAL SOCIETY

May 18, 19, 20, 1943
Palmer House, Chicago

War and pestilence add to the doctor's burden. The accelerated tempo of our lives in the practice of medicine points unerringly to the need of a comprehensive survey of present scientific developments. This can best be accomplished by attending the Annual Meeting at the Palmer House in Chicago.

It is the 103rd Annual Meeting of our State Society and holds promise of being a big one since national conventions are being discouraged.

In addition to the usual commercial displays there will be many scientific exhibits. They will be diverse and of deep educational concern to each of us.

General sessions will be of great interest, but in addition, the special sections will appeal to those with particular interests. Army Day and Navy Day will give us an opportunity to hear prominent guest speakers, telling of the newer developments in military medicine and hygiene.

In addition to making your own plans to attend, tell all your friends you will meet them there.

H. Kenneth Scatliff, M. D.
Chairman Publicity Committee.

CALL FOR SCIENTIFIC EXHIBITS

The Committee on Scientific Exhibits of the Illinois State Medical Society announces that applications for exhibit space should be submitted promptly for consideration. Selections will be made as nearly as possible in order of receipt. Accordingly, it will aid the applicants and also the Committee if the applications are submitted early.

The Committee is particularly anxious to have exhibits which deal with the theme of this annual meeting, namely, "medicine and its relationship to war problems". This includes (1) the newer things that have arisen in civilian practice, teaching, and research; (2) all activities which and execution; and (3) all types of medical and execuition; and (3) all types of medical problems which confront industry.

The exhibits this year promise considerable change over those of former years. The Committee wants information about potential exhibits.

Communications may be addressed to Dr. H. Close Hesseltine, 5848 Drexel Ave., Chicago.

CURRENT LEGISLATIVE TRENDS

The year 1943 will undoubtedly be a most trying one to the medical profession, from the standpoint of proposed legislation which would affect the practice of medicine as it has heretofore existed in this country.

The danger of the socialization of medicine in the United States is more imminent today than ever before. It is common knowledge that the 78th Congress will soon be asked to take action upon a plan to greatly expand the Social Security Act. It is reasonable to anticipate that the plan as presented, will not only extend the provisions of the Act to virtually every employed person in this country, but that among other things it will provide for compulsory health insurance, by allocation of funds for the purpose of providing and paying for medical and hospital care for the employee when sick or injured. Compulsory health insurance and socialized medicine are inseparable. Under such a system, the patient would no longer be free to choose his own physician. He would receive such medical attention or hospital care as might be authorized by a lay administrative body. The

physician would be designated and paid not by the patient, but by the government and he would thus become, to a great extent, an employee of the State.

A review of the experience in England, which has had socialized medicine since 1912, demonstrates that under such a system the cost of medical care increases, the quality decreases, and that the average worker is absent from his work several times as many days per year as was the case under a system of free medicine. No one will deny that the goal of making competent medical care available to all who need or desire it is a most worthy one, but the socialization of medicine — which has proved a failure elsewhere — is not the answer.

There is now pending in Congress a bill to amend the United States Employee's Compensation Act, so as to permit chiropractors to treat injuries to employees covered by that Act. The real purpose of this bill, which has been unsuccessfully brought forward several times in the past, is to gain some federal recognition of the chiropractor, and thus increase his prestige in the various states.

As of this date, nothing has been presented to the General Assembly of Illinois which is of particular interest to the medical profession of this state. It is certain, however, that a great number of bills directly affecting the fields of public health and the practice of medicine will be introduced in the next four months. The Society's legislative committee expects that the usual crop of low-grade bills will again be presented, this time under the cloak of national emergency and public necessity. All such measures will be vigorously opposed.

John W. Neal, Exec. Sec., Legislative Com.

That pulmonary tuberculosis is not uncommon in elderly persons is a fact that seems to fail to impress both the public and the physician, possibly due to the nature of the older body affected by a chronically progressive disease. Those who have studied pulmonary tuberculosis in the higher age groups are impressed with the lack of emphasis on this phase in the study of the disease. A flank attack on this weak spot would corcumvent more circuitous methods to the same end, namely, the lessening of the general incidence of tuberculosis. J. T. Freeman, M.D. and C. A. Heiken, M.D., American Jour. of Medical Sciences, July, 1941.

UNSUNG HEROES

The following appeared in the St. Louis *Globe-Democrat* on January 17.

Among the unsung heroes of this war are the doctors who serve mankind right here at home. Not able to enter into the service for our armed forces because of family dependents, or age, they've gallantly taken on three or four times the practice to which they were accustomed (and physically conditioned) during peace time, and they are working at such breakneck speed that their energy and their health are fast becoming affected.

Up in the morning at 6 o'clock when the skies are as black as pitch . . . off to the hospital to perform two or three operations . . . house visits here and there, and all over the town on patients too ill to come to the office, or loathe to use their gas . . . emergency calls catching up with them at every stop. . . . A dash to the office where 30 or more irritable people await to recount their ills and their woes — even their financial or domestic troubles . . . constant demands on the telephone . . . a bite of uninteresting food sent in from a near-by drugstore, sandwiched between patients, swallowed in gulps. . . . At last, a brief breathing space when the last patient has finally been cared for . . . but more calls to be made on the bed-ridden . . . then afternoon office hours again (this time from 4 o'clock till heaven knows when), with emergency requests pouring in to "come here — come there at once — at once!"

No time for dinner, no time for family, no time for home. . . . They're worked beyond all human capacity, these soldiers of the medical profession, in their gallant and uncomplaining service to mankind on the home front. . . . A salute to them, and "God bless you, every one!"

The education of most tuberculous patients may be handled best on a personal basis, but few physicians have time to give individual instruction to many patients. A well qualified nurse can accomplish much in a hospital by meeting the patients singly upon admission and giving instruction in regard to the technique of controlling the dissemination of infectious organisms, the importance of rest and a general orientation to the routine of institutional life. For some individuals a simple conversation, indicating the technique necessary for the hygienic control of cough and care of expectoration is all that is necessary. Many patients, however, need repeated instruction and encouragement including demonstrations. Esta H. McNett, R.N., Amer. Rev. of Tuber., Nov., 1942.

Correspondence

ANNOUNCE REFRESHER COURSE

A refresher course in laryngology, rhinology and otology will be given March 22 to 27 at the University of Illinois College of Medicine.

To meet the needs of ear, nose and throat specialists who, under existing conditions, are able to devote only a brief period to postgraduate review study, this didactic and clinical course has been arranged. Registration is limited. The fee for the complete course is $50.00. In letter requesting application for registration, state school and year of graduation, also details concerning specialty training and experience.

Address Department of Oto-Laryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago, Illinois.

SCHEDULE FOR TWENTY WAR SESSIONS ANNOUNCED BY AMERICAN COLLEGE OF SURGEONS

New developments in military and civilian medical and hospital service will be brought to members of the medical profession at large, and hospital representatives, through a series of twenty War Sessions, which began March 1, to be held throughout the United States under the sponsorship of the American College of Surgeons with the cooperation of other medical organizations and of the Federal medical services.

Each War Session will consist of an all-day program, lasting from 9:00 o'clock A. M. to 10:00 P. M., including luncheon and dinner conferences. There will be eight meetings in each session, four of which will be for the entire assembly, and the remainder divided into two meetings each for physicians and for hospital representatives. Subjects will be similar in the different places but some of the speakers will be changed in the different states and service commands. Nationally known representatives of the United States Army, the United States Navy, the United States Office of Civilian Defense, the United States Procurement and Assignment Service, and the United States Public Health Service, will address the meetings and will lead discussions, in addition to participation by prominent leaders in civilian medical practice and hospital service.

Topics to be discussed relating to military medicine will include care of the ill and injured in combat zones and after evacuation. The newer types of injuries encountered in this war, such as crush and blast injuries, will be especially considered, together with prevention and treatment of infections, and treatment of burns, shock, and injuries of specific parts of the body. Anesthesia, plastic surgery, and the psychoneuroses of war, will be some of the other topics. Problems of civilian medical care in wartime which will be discussed will include the responsibilities of individual doctors and hospitals; personnel problems of hospitals; organization of emergency medical services; maintaining adequate supplies, furnishings, and equipment; maintenance of high standards of medical and nursing education, and of hospital service in general; hospital public relations; and administrative adjustments in professional staffs of

hospitals. The opening meeting of each session will be devoted to discussion of "Medical and Surgical Aspects of Chemical Warfare," led by a representative of the United States Office of Civilian Defense, and the closing meeting will be a panel discussion on problems in wartime civilian medical practice to be led by representatives of the United States Public Health Service, the American College of Physicians, the American Medical Association, medical services in industry, and the American College of Surgeons. Some of the topics for consideration at this meeting will be endemic and epidemic diseases, including tropical diseases; medical services in industry; medical and surgical practice; and supplementary postgraduate education for medical officers and civilian doctors.

ONE HUNDRED FIFTY GRADUATE AT MARQUETTE

Rear Admiral Ross T. McIntire, Surgeon General of the United States Navy and personal physician to President Roosevelt, gave the Convocation Address and had conferred upon him the degree of Doctor of Science (honoris causa) at the Commencement Exercises of the Marquette University School of Medicine in the Milwaukee Auditorium, Saturday evening, February 13th, 1943.

As a result of the accelerated program in medical education and the abolishment for the duration of the War of the requirement of the internship, which has existed since 1918, for the degree of Doctor of Medicine, two classes of one hundred and fifty students were graduated. There were 73 students in the class that entered the Medical School in 1938 and 77 who entered the Medical School in 1939. All of these graduates will serve a twelve-month internship as Doctors of Medicine, which corresponds with the custom of the majority of medical schools in the United States and Canada.

All students in the Marquette University School of Medicine, like those in other class A medical schools in the United States, are Reserve Officers in either the Army or the Navy. These medical schools are the only source of supply of medical officer personnel and function like Annapolis and West Point in the education of line officers — Eben J. Carey, M.D., Dean.

RESEARCH PRIZE CANCELLED

The $500 Research Prize annually offered by the American Urological Association will not be awarded this year.

The Government has again discouraged the holding of medical conventions, except those primarily of military interest — and at these there is to be a ban on social events. Under the circumstances, plans for the June meeting of the American Urological Association in St. Louis have been cancelled.

Miley B. Wesson, M.D.
Chairman, Committee on Research
American Urological Association

AMERICAN RED CROSS
National Headquarters
Washington, D. C.

Illinois State Medical Society: —

I am writing to announce the appointment of G. Foard McGinnes, M.D. as Director of Medical and Health Service of the Midwestern Area of the American Red Cross with headquarters in St. Louis. Your state is included in this Area.

Dr. McGinnes comes to the Red Cross from the Tennessee Department of Public Health where since 1929 he was Director of Venereal Disease Control Service, Associate Professor of Preventive Medicine of the University of Tennessee and Chief of the Department of Siphilology, Meharry Medical College. Previous to 1929 he was with the Virginia State Department of Health, Director of Bureau of Communicable Diseases.

It is important that sound and constructive relationships be maintained between the American Red Cross and the medical profession in the several States. Doctor McGinnes' clinical back ground and viewpoint will, I am sure, promote such relationships.

I would appreciate your carrying a notice of this appointment in your State Journal in order that your County Societies may know of his appointment and availability in the discussion and promotion of medical-Red Cross relationships.

Sincerely yours,
Albert McCown, M.D.
Director Medical and Health Service

WOMANS' AUXILIARY NOTES

Convention Headquarters:
Palmer House, Chicago, Illinois

The Sixteenth Annual Convention of the *Womans' Auxiliary to the Illinois State Medical* Society will be held in Chicago, Illinois May 18-20th with headquarters at the Palmer House.

The Committee on arrangements is making every effort to present an interesting program. All doctor's wives are invited to attend the general sessions and all social functions.

Read your April and May, Illinois State Journal Auxiliary news for the complete program, and plan to be with us May 18-20th.

Cordially yours,
Bernice L. Stigman
(Mrs. Charles W.)
Convention Chairman

To all Presidents:—

In my capacity as President of the Woman's Auxiliary to the Illinois State Medical Society, I offer my services to you and your members. I shall be very happy to assume the responsibility of forwarding to all State and County Auxiliary presidents, the name and addresses of our members who are temporarily located in their districts, as we have many of our doctors serving in base hospitals throughout the country.

We as an Auxiliary should extend warm hospitality to these loyal wives and members whenever the opportunity presents itself. Let us feel it our personal obligation to our doctors and Auxiliary members.

Remember, no list too long or short for attention.

Trusting you will co-operate and forward a list of your members who are away from their own county, I am,

Yours most sincerely,
Mrs. W. J. Wanninger, President
Mrs. C. R. Landis, Corres. Secy.

AUXILIARY MEMBERS

This war is showing us that we need one another desperately. New responsibilities are being forced on all of us. As never before, we realize the necessity of pulling together to fight the common enemy, but we can not blindly ignore the confusion and division that still exist in this country in the second year of war.

The work of the woman's auxiliary must concentrate on this effort, through our own particular programs. Let us all do all we can, both as citizens and members of the woman's auxiliary, to aid particularly in safe-guarding the public health, the fundamental issue in civilian defense.

As our year is nearing the end, let us think back. *How does a member support her auxiliary?*

By —

1. Paying dues.
2. Attending meetings.
3. Accepting offices, and chairmanships in other organizations, especially those related to health.
4. Co-operating in the sale of Defense Stamps and bonds.
5. Red Cross, First Aid, Nurses Aid, Home Nursing and Nutrition programs, all come under the national emergency.

Let us all do our part.

Mrs. M. A. Nix
State Organization Chairman and
President-Elect.

THE INDUSTRIAL FRONT

Three hundred and fifty million work days lost annually through illness of the gainfully employed is our country's discreditable record. At a wage of five dollars a day this means a $1,750,000,000 yearly deficit in labor and production. Assuming that half of this is due to preventable disease we could build a dozen battleships in the time saved by full use of known preventive measures.

In working days lost per case, tuberculosis heads the list of unnecessary disabilities. This national loss is not due alone to doctors, nor the public health service, nor the ignorance and carelessness of the people themselves. The blame belongs to all three. The fervor of patriotism sweeping the country keeps our eyes fixed overseas. We are united in the will to annihilate despotism and reestablish freedom for all nations. This is our duty, but we must not forget the treacherous enemy within our own boundaries. Tuberculosis, in collusion with its fellow fifth columnists, is impeding victory by a campaign of sabotage behind the lines.

The armed forces have foreseen the menace of tuberculosis in the ranks and are taking active measures to combat it. Industry has awakened to the threat but is still floundering in its effort to thwart it. The medical profession is only half alive to its opportunities for patriotic service. Right now is the moment to stand by the men who make the guns in an all-out fight to eradicate this leading saboteur of victory. Kendall Emerson, M.D., Journal Lancet, Apr., 1942.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

During the past years the writer has received many letters and expressions regarding this column. The large majority have been in accord with the views expressed. There have, however, been some who have felt that the views expressed, and the writer, are Anti-Administration, and that during these times such expressions tended to disunity and to give aid and comfort to the enemy.

It is generally conceded that in a democratic country that we must have a two party system, and a two party system cannot survive without a strong minority party. Those who do not always view the sentiments of the party in power can be classified as Anti-Administration, but not as Anti-American. The tendency for the political parties to get into power, rise to considerable power, and then be replaced by the minority party is an expression of a real democracy.

We are now engaged in discussing Post-War Planning. This encircles the broad field of management, economics, social security and political administration. Management is already setting up plans for the Post-War period, because management realizes that there must be a swift shift from war to peace which means total reorganization of our production and distribution. The government is considering the social security changes they deem necessary in the Post-War period to insure economic and social security.

Labor is concerned over the future of employment and the standards of living they are to have, and the part that they are to take in management. Farmers are, likewise, interested in Post-War Planning because they have many problems for which some solution must be found. Medicine is interested in how all of these readjustments will effect it. We are concerned about the ruling of the Supreme Court and its effect on the practice of medicine as a whole. We are concerned about medical education and the maintenance of the high standards developed in the last thirty years.

Many of these problems are confusing, and the method of approach to the solution of these problems must be carefully considered. Whatever the final outcome is medicine will be effected by it. Not only, is the approach to these problems essential, but the organization to make the approach is also important. The guarding influence in this approach must be by the leaders of American medicine. All organizations sharing an interest in the future of the medical practice should be drafted together for their Post-War Planning before any single organization presents or adopts any planning for the present or the Post-War period. The meeting to be held at The Waldorf Astoria, New York City, March 15, brings representatives of the following organizations together.

American Medical Association; American College of Physicians; American College of Surgeons; American Drug Manufacturers Assn.; American Hospital Association; American Pharmaceutical Mnfrs. Assn.; American Pharmaceutical Association; American Surgical Trade Association; Wholesale Surgical Trade Association; National Physicians Committee for EMS.

This should create unity of purpose, give rise to intelligent discussion and set the pace for solidarity of purpose and the approach.

There are those among the profession who feel that the American Medical Association has lost considerable of its influence and prestige, and that the approach should be made by independent organizations. There may be merit to the wisdom of other organizations making the approach but in the final analysis the American Medical Association will be to a large extent the determining factor.

Medicine's Role in the War Effort

PROCUREMENT OF MEDICAL OFFICERS FOR THE ARMY IN 1943

NOTE.—*The following is an official statement from the Medical Corps of the United States Army indicating the procedure to be followed in procuring medical officers for the Army during* 1943.—ED.

The Surgeon General is responsible for the procurement of medical officers for the Army of the United States. There is an Officer Procurement Service set up by the War Department for the procuring of applications of individuals for commission in the Army. The War Manpower Commision has set up a Procurement and Assignment Service for Physicians, Dentists and Veterinarians to designate the individuals who are essential to the community and those available for duty with the armed forces.

In order to coordinate the work of these two agencies, the Surgeon General has outlined the following procedure for the procurement of officers during the year 1943:

The state chairmen of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians will from time to time prepare lists of individuals who are declared available for duty. Their names will be sent to the Central Office of the War Manpower Commission in Washington, D. C. There a card will be prepared and sent to the individual informing him of the fact that he has been classified as available for military service and requesting that he send the attached card to the state chairman of the Procurement and Assignment Service signifying his interest in applying for a commission, and stating his preference for duty with the Army or Navy. Those who choose to serve in the Army may request that their papers be processed with the idea of assigning them to duty with the Air Forces.

The state chairmen will furnish the candidate to the designated field office of the Officer Procurement Service of the War Department. This office will request the individual physician, dentist or veterinarian to complete the proper application blanks and return them to that office and to have a final type physical examination, which will be accomplished at the nearest properly equipped army post.

The Officer Procurement District's office will forward the papers to the Surgeon General in Washington, who will then review the application for commission in the Medical Corps, Army of the United States. Those applications with the notation "Air" as designated will be referred to the Office of the Air Surgeon for further classification and assignment. Those applicants who are favorably considered will be notified at the earliest possible date by the Office of the Adjutant General that their recommendation is accepted and will receive orders to proceed to their proper station.

It is hoped by following this procedure that the Surgeon General will be able to provide an adequate medical service for our armed forces. It is contemplated that all individuals who are classified as essential to the civilian medical needs will not be asked to apply for a commission. No individual so classified need con-

tact the Surgeon General or apply for a commission unless he can make arrangements with the state chairman of the Procurement and Assignment Service to have his classification changed from essential to available. The cooperation and interest of all physicians who are interested in military medical service will be appreciated, in that by proper application and processing of their case it will be much easier to provide necessary medical care for all parts of both the civilian and military services.

Concurrent with the changes in the military and civilian requirements for physicians and the changes in the recruiting procedures, the Surgeon General has announced the following policy, which will govern action to be taken in the consideration of ages and grades of initial appointments on all applicants effective Feb. 15, 1943:

1. Eligible applicants for appointment in the Medical Corps, Army of the United States, under the age of 38 will be appointed in the grade of first lieutenant only.

2. Eligible applicants between the ages of 38 and 55 will be appointed in the numbers and in the grade for which specific position vacancies exist.

There is an acute need for medical officers under 38 years of age. Applications are being solicited from physicians of this age group in those localities that have not furnished their quotas of physicians and where they are designed by the Procurement and Assignment Service as available for military service.

Appointments will be made by the Adjutant General of eligible applicants recommended by the Surgeon General and approved by the Secretary of War's Personnel Board.

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EXPERIMENTAL MEDICINE IN RUSSIA IN THE WAR

PROFESSOR LAVRENTIEV
(Supplied by the Russian Embassy)

The All Union Institute of Experimental Medicine (VIEM) is the greatest medical research institute in the Soviet Union. Recently it celebrated its fiftieth anniversary. Besides I. Pavlov and Savich, many conspicuous scientists are associated with the institute, including Bykov and Speransky.

Shortly before the outbreak of war against Germany, the institute had two leading scientific centers, located in Moscow and in Leningrad, and a special biologic station with a monkey nursery at Sukhumi in the Caucasus.

Of particular interest in the studies carried out by I. P. Pavlov and his school is the production of the nervous diseases and neuroses in animals. Evidence from extensive investigations undertaken in the department of pathology, headed by academician Speransky, showed the leading role of the nervous system in human conditions of disease.

Among the clinical studies are those by Prof. A. V. Vishnevsky in local analgesia.

The invasion by Germany set before the institute two great problems which had to be solved as promptly as possible to alter the character of the problems pursued in the institute and to secure the productive research work in wartime. Decentralization of the institute was carried out, and a number of its laboratories were transported far to the rear. In July 1942 a session of the institute was held in Novosibirsk to summarize its achievements during the first year of war.

A. Smorodinzev has developed a method of prompt diagnosis of typhus. This method enables one to diagnose typhus on the second or third day of the disease and thereby to prevent its dissemination. Dr. Levkovich prepared vaccines against typhus following all existing methods (Weigel, Duran-Sparrow, Cox). These were tested on laboratory animals, as well as in clinics of the institute. Professor Petrischeva developed prescriptions of diverse extracts, preparations and ointments protecting man against lice. The chemical laboratories of the institute have found important diagnostic symptoms for identifying typhus. This concerns a peculiar chloride crisis undergone by the patient on the seventh day of the disease, chlorides disappearing from the urine to reappear again toward the end of the disease.

The bacteriophage laboratory headed by Professor Ermoliev has produced active phages against dysentery, pus forming cocci and cholera. Some interesting combinations of phage with modern chemotherapeutic substance (sulfapyridine and sulfathiazole) are proposed by this laboratory.

Application of chronaximetric methods to the injured and uninjured nerve was proposed by Prof. A. Magnitsky as a means for ascertaining

the lesion of the nerve stem without recourse to an operation. This method is now used in hospitals. In the laboratories of Professor Anokhin and Kharitonov, the causes of pain accompanying lesions of the nervous system have been ascertained and the methods of eliminating them proposed. Combating pains, acceleration of the nerve regeneration and the prevention of irregular growth of the nerves are at present the most important problems of neurosurgery. So far hospitals and physicians have been very pessimistic regarding the replacement of defects of the nervous system. Dr. A. Anokhin suggested a method of replacing defects of the nerve stems by transplanting human and animal nerves, preliminarily treated with formaldehyde. Many clinical cases have already been treated by using this method.

A special study of regeneration of the nerve and of the methods which may prevent its irregular growth and accelerate regeneration were carried out in the laboratory of Professor Lavrentiev. The method was devised of observing the regeneration of nerves in a live animal by means of vertical microscopic illumination. The great role of blood vessels was ascertained, which were shown to change and develop within the damaged area of the nerve stem.

Injuries of the brain were studied in the clinics of VIEM, headed by Professor N. Graschenkov. The work of the nerve clinic in VIEM was organized in such a way that observations on the wounded were begun at a dressing point at the front and completed in the rear at a hospital. This offered the possibility to follow both the healing process of the wound and the results of the preventive and curative treatment. In treating cerebral wounds, surgical methods were combined with intravenous and administration by mouth of modern chemotherapeutic substances, such as streptocide, sulfidin and sulfathiazole, which led to a great decrease in the mortality rate. The successful treatment of dangerous complications of skull wounds, as caused by microbes of gas gangrene, was devised. Professor Kaplansky and Professor Braunstein showed that long lasting pains elicit appreciable metabolic changes, closely resembling those associated in the human and animal organism with vitamin B deficiency, and the deficiency of this vitamin causes in its turn an inflammatory process in the nerve. This treatment, with large doses of vitamin B, proved effective.

Besides the common methods of treatment with heat, the electric current and light the VIEM clinic inaugurated occupational therapy. A wounded fighter gets gradually accustomed to movements associated with labor processes, such as sewing, hammering and planing. In this way the nervous system and limb are gradually reorganized and begin to perform movements which were impossible prior to the treatment.

The treatment of wounds of the suppurative processes of the joint and bone inflammations was taken up by the surgical clinic in VIEM. Prior to the war, Prof. A. Vishnevsky suggested treating the wounds by means of plugs soaked in an emulsion of balsam, tar and similar substances, with an admixture of xeroform. This method proved exceptionally effective in treating large wounds, those of the chest and abdominal cavity included.

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CARE AND DISTRIBUTION OF GAS MASKS

The Office of Civilian Defense, Washington, D. C., issued on January 20 Operations Letter 106, for the special attention of states and communities to which gas masks have been allocated.

Noncombatant masks are now being shipped from manufacturers and U. S. Office of Civilian Defense supply depots to communities which have received allocations of masks and have returned, properly executed, OCD form No. 501. These will be in assorted sizes.

Valuable and critical materials are used in the manufacture of gas masks. Hence care must be exercised in their handling, distribution and storage in order that the usefulness of the present limited supply may be preserved.

It is recommended that 5 per cent of the masks other than those designated for training purposes be held in reserve by the local property officer, that defective masks and those with exhausted canisters be replaced from this reserve and that the remainder, other than those designated for training purposes, be distributed to the protective services in communities in accordance with "Regulations No. 1, Governing Loans of Equipment and Supplies to Civil Authorities" (paragraph 7c).

It is recommended that about 20 per cent of the number allocated to each service be stored by that service in places readily available, as for example police stations, fire stations, sector wardens' posts, hospital and casualty stations serving as assembly points for medical teams, rescue depots, public works and public utilities warehouses. Storage must be in a cool dry place, and masks should be kept from contact with sunlight, oils or corrosive liquids and vapors. This increment of masks should be held as a reserve and should not be assigned to individuals. It is important that this reserve be decentralized as a safeguard against fire or bombing and also to permit rapid distribution in case of an emergency.

The remaining 80 per cent allocated to the services may be issued to individuals in the services but should not be carried by them during their daily activities. These masks should be kept at the post where the individuals will assemble during drills or enemy action. Under no circumstances should masks be assigned to individuals before they have received training in their use and care, including proper storage.

The commander of the local U. S. Citizens Defense Corps, through his senior gas officer, should immediately arrange a gas mask training program for those to whom masks are to be issued. If no senior gas officer has been appointed, steps should be taken to appoint one in accordance with Operations Letters 42 and 91.

In the training program the commander and senior gas officer of the local U. S. Citizens Defense Corps should utilize the services of individuals in the community who have attended the War Department civilian protection schools. If there are no qualified individuals, assistance should be sought from the state gas consultant, who may request aid from the regional director of the U. S. Office of Civilian Defense.

Repair of masks is not to be attempted locally except in case of extreme necessity. Defective masks or those with exhausted canisters should be collected by the local property officer and returned, preferably in lots of twenty or more, to the nearest U. S. Office of Civilian Defense supply depot for repair and replacement:

Salt Lake City, 341 Pierpont Avenue.
Chicago, 1750 Wrightwood Avenue.
Fitchburg, Mass., Willow Street.
Hanover, Pa.
Birmingham, Ala., 503 South Twenty-Second Street (Long Furniture Manufacturing Company).

When a local property officer has masks which he wishes to return, he should so notify the nearest depot commander, who will then send shipping instructions and a government bill of lading which will authorize the transportation of the damaged masks without expense to the locality.

After use, masks should not be worn by another individual without proper sterilization. Instructions for sterilization are given in Office of Civilian Defense publication "Protection Against Gas."

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COMMITTEES ON WAR PARTICIPATION

In a recent conference of the War Participation Committee of the American Medical Association it was urgently suggested that all state associations create similar committees, so that these committees may supplement the existing committees on medical preparedness, even without any change in their personnel. In this connection the chairman of the committee, Dr. Walter F. Donaldson, Pittsburgh, points out that the functions of this committee described by the House of Delegates of the American Medical Association which met in 1942 are as follows:

"It should feel free to express comments and criticism of policies relating to the participation of the medical profession in the war effort.

"Without authority to act, only to advise, it becomes a committee to express the views of the medical profession on such proposals as are made which may have a direct bearing on the principles which the American Medical Association regards as fundamental in the provision of good medical service."

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ROLE OF NURSES IN CIVILIAN WAR SERVICE

The role of nursing in the Emergency Medical Service for the care of civilians injured by enemy action is set forth in the latest bulletin issued by the Medical Division of the Office of Civilian Defense. "Nursing Participation in the Emergency Medical Service."

The nursing program of the Medical Division includes making of specific arrangements for nursing service with Mobile Medical Teams and in Casualty Stations and Casualty Receiving Hospitals;

cooperation with other agencies in plans for the acceleration of nursing education; preparation of accurate inventories of available nursing resources, and collaboration with the American Red Cross in its nursing programs, especially the Volunteer Nurses' Aide program. Nursing executives are also being enlisted for service in Emergency Base Hospitals to which casualties will be evacuated in the event of enemy attack upon coastal or other communities.

These activities have been promoted through the nursing section of the Medical Division, which was organized in October 1941 with a full-time nursing consultant as chief. To meet requests for field consultation, the U. S. Public Health Service, the U. S. Children's Bureau and the American Red Cross were requested to assign their field nursing consultants to act as field consultants for the OCD.

In addition to this consultation service, which is still active, the organization has now been expanded by the appointment of Nurse Deputies to the staffs of Regional Medical Officers in certain Regions. Forty-seven State Chiefs of Emergency Medical Service have appointed State Nurse Deputies and the appointment of local Nurse Deputies (city, county or other subdivision of the State) is going forward rapidly.

The new nursing bulletin of OCD presents in detail the duties of each Nurse deputy.

The Regional Nurse Deputy advises the Regional Medical Officer on all matters concerning the nursing program of the Medical Division as it develops within the Region. She cooperates with State Nurse Deputies and with nursing consultants of other agencies in the development of their plans and conducts conferences and institutes for the instruction of nurses in the Region. In order to provide for mutual aid if it should be necessary when disaster strikes, the Regional Nurse Deputy must be constantly informed concerning the status of available nursing service and must correlate the programs of the States of her Region. Finally, she assists in State and local recruitment and training of Nurses' Aides and other volunteer and paid assistants who may serve in Casualty Receiving Hospitals or Emergency Base Hospitals.

In describing the duties of the State Nurse Deputy, the bulletin emphasizes that she should be a member of the State Nursing Council for War Service and should be this Council's representative on the State Defense Council.

The first duty of the State Nurse Deputy is to mobilize the nursing personnel of her State for duty in the Emergency Medical Service. She must interpret the program to nursing groups and must keep local Nurse Deputies informed of developments. Advance planning with the State Hospital Officer for the provision of nursing service in Emergency Base Hospitals, if evacuation of patients to these institutions should become necessary, is an important function. Similarly, it will be her responsibility to plan with State evacuation authorities for nursing personnel to serve in reception areas. She assists the Red Cross and hospitals in the advancement of the Nurses' Aide program. To maintain up-to-date information on all phases of the program in her State, she is required to compile periodic reports summarizing information from local Nurse Deputies.

On the local Nurse Deputy falls the responsibility for actual execution of plans for service. The bulletin sets forth in detail the activities through which she assists the local Chief of Emergency Medical Service. Her primary duty is to see that adequate nursing personnel is available for the needs of the Emergency Medical Service. She must therefore interpret the program to local nursing groups, maintain a file of the nursing resources of the community, arrange for instruction of the nurses and nursing auxiliaries in their duties, and assist in assigning them for service in Mobile Field Units, in Casualty Receiving Hospitals and Emergency Base Hospitals.

To provide emergency nursing care in homes for slightly injured casualties, for convalescent patients discharged from hospitals to make room for casualties and for ill persons in shelters and rest centers, the local Nurse Deputy assists the local Chief in establishing centralized facilities.

In addition, she aids in the recruitment, training and assignment of Nurses' Aides and keeps current information concerning nursing deficiencies of local hospitals and health services so as to be prepared to supplement their personnel during periods of emergency.

For the information of nurses, the operation of the Emergency Medical Service is described, with emphasis on the nursing duties involved. Nurses are also advised as to the special training they will need for this wartime service, including first aid, administration of blood plasma and treatment of injuries from war gases. Knowledge of elementary principles of sanitary and public health engineering relating to the protection and maintenance of safe and adequate supplies of water, milk and food under emergency conditions is also valuable to the nurse, the bulletin suggests.

Nurses are urged to confine their volunteer activities to nursing service, but there are many related opportunities in their own field, the bulletin points out. Certain volunteer activities which can be carried out on a part-time basis by nurses who have home responsibilities, or who for other reasons can give only a part of their time, are listed. Examples are recruiting candidates for nursing schools, teaching home nursing and Nurses' Aide classes, recruiting candidates for Nurses' Aide courses, serving part-time in Casualty Receiving Hospitals and in medical field units.

An appendix presents pertinent information on such matters as the operation of the Air Raid Warning System; the U. S. Citizens Defense Corps; U. S. Citizens Service Corps; the Civilian Defense Auxiliary Group; insigne, identification and dress for nurses; personnel file for emergency nursing serv-

ice; relationship of the Office of Civilian Defense and the Red Cross; self-protection against injury from war gases and home water supply precautions.

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CIVIL AIR PATROL WILL TRANSPORT PLASMA IN EMERGENCIES

James M. Landis, U. S. Director of Civilian Defense, has arranged for the Civil Air Patrol to fly blood plasma supplies into stricken areas in the event of emergencies, the Medical Division, Office of Civilian Defense, announced in Circular, Medical Series No. 27, February 1.

In instances where it becomes necessary to supplement local stocks of plasma for the treatment of casualties caused by bombing, fire, tornado or other disaster and where other methods of transportation are not available or are inadequate, the Regional Medical Officer of Civilian Defense is instructed to contact the appropriate Wing Commander of the Civil Air Patrol and request emergency transportation for the plasma. Wing Commanders have been authorized to accept such requests only from the Regional Medical Officers.

These arrangements apply for all States except those located within the jurisdiction of the Western Defense Command, the Circular States. It is understood that in those States the Western Defense Command has sufficient nontactical airplanes available to furnish such transportation.

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REHABILITATION OF SELECTEES

Ninety-nine patients with hernia referred to the Illinois State Department of Public Welfare by the Selective Service System were cured and made fit for military service in the last six months, according to a report by the Illinois State Welfare Director submitted to Governor Green. Twenty-five were treated by local or staff physicians and 74 submitted to an operation by the chief surgeon of the Department of Public Welfare, Dr. Frederick Gruneck of Chicago. All these men were rehabilitated without charge in state hospitals.

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OATH TAKEN BY ALIENS

The director of civilian defense, James M. Landis, Washington, D. C., on January 7 issued Amendment No. 5 to Regulations No. 3 of the Office of Civilian Defense, effective immediately. The amendment adds to section 9 (*a*) the following: "The oath taken by each alien appointed to membership in the Defense Corps may omit the first two clauses of the form hereinbefore set forth."

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URGE SPEEDY NATURALIZATION OF ALIEN PHYSICIANS

Because of the acute shortage of civilian physicians throughout the United States, the Immigration and Naturalization Service has been directed to expedite the naturalization of alien physicians, according to a release from the Department of Justice, January 16. Immigration Commissioner Earl G. Harrison has issued instructions to expedite the filing of petitions for naturalization and to hold hearings in advance of their regular order on the calendar in the cases of practicing alien physicians or aliens who would be qualified to practice if they were citizens. In issuing the instructions, Commissioner Harrison pointed out that many states, either by statute or by the administrative ruling of licensing boards, require applicants to establish American citizenship before they are admitted to the state licensing examinations for the medical profession. Other states, he said, issue temporary licenses which are subject to cancellation unless citizenship is obtained within a specified period of time. The order expediting naturalization of physicians supplements instructions issued the service in January 1942 to expedite applications for citizenship submitted by aliens in the armed forces or engaged in national defense work. In the case of physicians they are not required under the new instructions to obtain a letter from a national defense agency testifying to the nature of their employment in order to secure national defense preference in naturalization. Attorney General Francis Biddle emphasized that the new procedure in no way affects the statutory requirements for naturalization but simply expedites the handling of applications.

An ex-patient was asked if he had tried a new device which is said to cut gas by half.

"Yes," he replied. "It did all the makers claimed for it, and it saved fifty per cent of my gas. I also bought a new carburetor which saved thirty per cent, got another brand of gas which saved twenty per cent, and some special spark plugs which saved another ten per cent. Then I took the car out for a test run, and I give you my word that the gas tank overflowed before I'd gone five miles."

"You can never talk to that patient," said the nurse to the doctor as they left a room on the women's ward, without her giving you a full recital of her ailments."

"Yes," said the doctor, "you might almost call it an organ recital."

Original Articles

CLINICAL CONSIDERATIONS OF SHOCK

WARREN H. COLE, M.D.
CHICAGO

Shock may be defined as peripheral vascular failure which may proceed to the extent that blood pressure and radial pulse are unobtainable. This condition was common two or three decades ago in civilian life, but fortunately is not often encountered now in the average surgical ward or operating room. The reason for this decrease in the incidence of shock is explained by a better choice of time for operation and especially by an improvement in the operability of the patient through proper preoperative care. Moreover, surgeons are now learning how much operative work a given patient will stand, and refrain from overloading that patient from the standpoint of operative manipulations, etc.

Needless to say, shock is extremely common in this war, as it has been in previous wars. In World War II there are three major factors resulting in shock, namely, 1 hemorrhage; 2 burns; 3 explosion blasts. In civilian life, hemorrhage and burns are important factors, but excessive manipulation at operation is likewise a factor.

There are obviously many other types of shock. For example, it is not infrequently encountered as a result of certain types of anesthesia, particularly spinal anesthesia, and deep ether anesthesia. Still other types such as those produced by excessive amounts of insulin, anaphylaxis, etc., occur but are of no consequence to us today.

From the Department of Surgery, University of Illinois, College of Medicine.

Pathologic Effects. — Regardless of the factor producing shock, the major pathologic effect remains constant, namely, that there is a fluid loss from the vascular system. In hemorrhage the source of the fluid loss is obvious, in that blood itself is lost. In burns, there will be no hemorrhage (unless there is a complicating wound); however there is a loss of plasma into the tissues directly under the burn, and a loss from the surface of the burn. In addition to this local loss there is probably also a diffuse loss of plasma through the capillaries into the tissues throughout the body. Naturally, there will be a decrease in the blood volume with a diminution in cardiac output. Hemoconcentration as a rule, is present in burns or other types of shock not associated with hemorrhage. If hemorrhage is the cause of shock or complications from other factors, there may be no hemoconcentration; in fact there may actually be a hemodilution. Anoxia is present to a much greater extent than would be expected from the heart action. This is particularly important from the standpoint of therapy, as will be discussed later. There is an increase in capillary permeability accounting for the diffuse plasma loss. There is usually a decrease in the CO_2 combining power indicative of acidosis. The urinary output diminishes with the depth of the shock.

Clinical Manifestations. — One of the earliest signs of the development of shock is a decrease in the blood pressure. An increase in the pulse rate is almost as constant, but occasionally shock is noted with a pulse rate no greater than 90 or 100 per minute. There are, of course, examples of shock with no increase in rate or even

a bradycardia. For example, shock produced by head injury may be associated with a pulse rate slower than normal. The patient's skin is pale, cool and moist, constituting what is frequently spoken of as a "clammy skin." The color is somewhat ashen, and the lips and nail beds may be actually cyanotic. The patient may be nauseated and may vomit, but this is by no means constant. The mental status usually does not vary much from normal. At times there may actually be euphoria. Apathy and stupor is more apt to be present in deep shock. Unconsciousness does not develop until the late stages.

Treatment. — The treatment depends on the cause. If hemorrhage is the important factor, *blood transfusion* obviously is the therapy most strongly indicated. If due to a burn in which hemoconcentration is present, the transfusion of plasma (without the red cells) is the procedure of choice. Since there has been no red cell loss, and there is an actual increase in the count, the transfusion of additional red cells would not be indicated. As a matter of fact, transfusion of whole blood will be detrimental insofar as the red cells contained in the blood may add to the viscosity which is already increased. Transfusion of whole blood could, therefore, interfere with cardiac output. When there is a combination of external blood loss and internal plasma loss the indications for either blood or plasma are not so clear cut but one of the two must be given. In general, if there has been a significant loss of blood the transfusion should consist of whole blood and not plasma.

Since there has been a fluid loss, regardless of its type, *fluid* must be replaced. The plasma or blood will partially replace this loss but not sufficiently. Glucose (5%) with or without saline should be given intravenously in quantities varying between 1000 cc. and 3000 cc., during the first 24 hours, depending upon indications. If saline is given, no more than 1000 to 1500 cc. should be given in a 24 hour period lest a salt edema be produced. Glucose and saline alone are practically ineffective in the treatment of shock. When a colloid such as blood or plasma is given, the glucose is distinctly beneficial. They are distinctly helpful, however in the prophylaxis of shock. Their inefficiency in the actual treatment of shock is dependent upon the fact that they may actually wash out electrolytes, and that they are rapidly excreted from the blood stream.

Body heat must be maintained. The temperature of the air about the patient to a great extent indicates the amount of heat necessary. There is a *great tendency to submit patients in shock to too much heat therapy.* During the past year or so, it has been shown by Blalock and Brooks that heat may cause sufficient vasodilation actually to increase the depths of shock. Moreover, if heat is utilized too extensively the metabolic processes may be stepped up so much that the products of catabolism are increased to the point where they are injurious. The use of hot air blowers, etc., is to be condemned since heat of this type is severe enough to result in deleterious effects. In reality, hot water bottles or warm blankets are applied in sufficient quantities to maintain body heat and not with the intention of bringing the temperature up sharply.

Elevation of the foot of the bed is definitely indicated to maintain adequate cerebral circulation. This is particularly important when we consider that one of the various deleterious effects of shock is cerebral damage incident to anoxia resulting from insufficient circulation. Since most patients with shock actually suffer from anoxia, *oxygen therapy* is frequently indicated. In general, the deeper the shock the more strongly indicated is oxygen therapy, which may be administered by a nasal tube, a Boothby mask or by means of an oxygen tent. Administration of oxygen moistened by passing through water and leading backward into the posterior pharynx through a small rubber tube in the nares, at a rate of 5 to 7 liters per minute is about as effective as any other method, and is in general much more simple than other methods. *Morphine* should be given in liberal quantities to relieve pain and apprehension. It is likewise conducive to sleep which is extremely important to patients who are critically ill. Morphine should not be given to an individual whose diagnosis is indefinite as related to abdominal injury. Neither should it be given, except in very rare instances, to patients with shock due to head injury.

It is essential that treatment be instituted immediately. A blood loss of 2 or 3 liters may be sustained with a consequent shock of great intensity, but which may be corrected rapidly by proper treatment including immediate transfusion. If the transfusion is immediate, the blood pressure and pulse rate return to normal and the patient feels well within an hour or two. On the contrary, if effective treatment such as blood transfusion is delayed for four or five hours the patient may respond so poorly to blood transfusion that survival may be in doubt. There is a crucial interval after which even the best therapy will not permit survival. It must be remembered, therefore, that treatment must be given *instantly*.

Very few drugs are indicated in the treatment of shock. Certain of them, previously used, are distinctly contraindicated and harmful; adrenalin and pituitrin are examples of harmful drugs sometimes used. The serious collapse which follows the stimulating effect of adrenalin and pituitrin explains the contraindication. It is true that cortical extract appears to have a beneficial effect in the treatment of shock particularly in its prophylaxis. Pectin has a beneficial effect in preventing blood loss from the vascular tree, but its use likewise is somewhat experimental. Acacia is effective in restoring blood volume through its colloid reaction, but is stored in the liver and excreted so slowly that the administration of more than one injection is contraindicated.

Many precautionary measures may be taken which actually result in the *prophylaxis of shock*. Adequate immobilization and splinting of fractures of extremities with traction during transportation will minimize the development of shock. The gentle handling of tissues without severe retraction will likewise minimize shock. Strict hemostasis should be emphasized since the blood loss at all operations is always greater than considered by the surgeon.

Treatment of War Conditions. — Under war conditions, shock may be produced by loss of blood, burns or blast. At the front line the battalion surgeon will encounter shock due to hemorrhage more frequently than to any other cause. Under those circumstances the transfusion of whole blood would be indicated. The transportation of whole blood and the complication of divisions in blood groups make transfusion of whole blood inconvenient, and even impossible when we consider that it can be stored only for a few days. However, it is now well known that blood plasma can be stored almost indefinitely. This is true of dried, frozen or liquid plasma. If the plasma is liquid it should be kept in a refrigerator at a temperature between 2° and 4° centigrade. If it is frozen it will have to be kept in a refrigerator at a temperature below freezing. If it is dried it may be transported at normal temperature and will keep for years. The use of dried plasma is so convenient that it is now being utilized in the Army and Navy to the exclusion of all other forms of blood. In fact, all the plasma being dried at the present time is being turned over to the Army and Navy. Plasma is effective in any type of shock although in hemorrhage the injection of blood would be slightly preferable. However, in military service, the advantage of whole blood over plasma even in shock due to hemorrage, is not sufficient to justify attemps to use blood except perhaps in base hospital units. The dried plasma is put up in packets along with needles, sterile water, etc., so that it actually can be used at the front line where the soldier has been hit.

Blast Shock. — During World War I blast shock was not recognized as it is during World War II, although on many occasions the effects of so-called shell shock were similar. Another reason why blast shock was not recognized during World War I lies in the fact that the explosions of the shell during that war were of much less consequence than the explosive force of the shell in World War II. This increase in force, therefore, has produced a definite type of injury which is now known as blast shock, or blast concussion.

Early in this war, the English recognized the serious effects of blast shock in so far as critical injury might be sustained by the victim without any external evidence of injury. In fact, many people have been found dead as the result of the blast without any external evidence whatsoever of injury. Autopsy in such cases revealed minute hemorrhages throughout the lungs, brain

and other vital organs. The experimental work of Zuckermann has shown that the explosive force acts directly against the abdomen and chest with the resultant intra-thoracic and intra-abdominal injuries. Such injury can be prevented by the application of a rubber protector on the side of the explosion. This would suggest that civilian or military personnel could be protected to some extent, by wearing some sort of a protector, particularly on the anterior surface of the chest and abdomen. This, of course, brings up a serious economic problem which might prevent use of the protector. Presumably, the sudden force against the chest and abdomen exerts pressure upward by means of the great vessels of the neck into the brain with a resultant concussion of a severity which varies with the force of the explosive blast. Apparently, considerable damage may be inflicted on the brain with no more evidence than petechial hemorrhages into vital structures.

The English have found that patients suffering from blast shock tolerate operative procedures and other manipulations very poorly. Although a patient known to have been near an explosive blast may present very little evidence of shock in so far as blood pressure, and pulse readings are concerned, yet he may sink rapidly into severe shock with even slight manipulation incident to closure of a minor wound. Obviously, any patient showing signs of shock such as low blood pressure, disturbed heart action, etc., is just as severely ill as any other patient in so-called surgical shock. As a matter of fact, the condition is much worse than surgical shock since there is damage in the brain, lungs, adrenals, etc., in the form of tiny hemorrhages or lacerations.

The treatment of this shock varies little from that of so-called surgical shock. The patient should be immobilized to bed rest, and a transfusion of plasma or whole blood given along with addition of other fluids. Heat is applied cautiously to maintain body heat. No drug therapy is indicated beyond mild stimulants. In other words, adrenalin, and pituitrin are contraindicated. The question of residual mental symptoms following blast shock cannot be answered at the present time. The author is fearful that there may be considerable residue in such patients, and that many of them may be incapacitated so much mentally that they cannot maintain their normal social funcion in life.

BLAST INJURIES OF THE CENTRAL NERVOUS SYSTEM

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There is a group of injured soldiers in whom changes occur as the result of rapid and extreme changes in atmospheric pressure and without the production of external evidence of injury, but with ensuing severe disorders. Illustrative of this is Ashmead Bartlett's description of a "valley of death" in the Dardenelles. "In one corner seven Turks with rifles across their knees, are sitting together. One man has his arm around the neck of his friend and a smile on his face, as if they had been cracking a joke when death overwhelmed them. All men have the appearance of being merely asleep, for of the seven I see only one who shows any outward injury."

To understand the effects of high explosive bombs, it is useful to know that when a high explosive is caused to burn by a suitable stimulus, the explosive is, within its own volume, suddenly converted into gas at a very high temperature and pressure. The effect is that of a sudden blow on the immediate surroundings, the violence of which depends on the velocity of detonation and pressure produced. The high pressure generated by the conversion of the solid explosive into gas causes the metal case to swell until it reaches about one and one-half times its original diameter, when it bursts into fragments or splinters. Immediately fragmentation occurs, the hot compressed gases are suddenly released and force their way past the fragments with a velocity of the order of 7000 feet per second. The air in contact with the gas is suddenly compressed, with the result that an intense blast pressure pulse or shock wave is formed at the boundary of the gases. This

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airborne shock wave is analogous to an ordinary soundwave, except that its amplitude and velocity are greater, as is its wave form. As the wave travels outward from the source its amplitude and velocity concurrently decrease, the velocity becoming stable at about 1100 feet per second. The violently expanding gases may be regarded as constituting a localized zone of expansion. In this zone there is essentially an outward movement of gas, giving rise both to intense pressure and dynamic forces which rapidly diminish with distance from the center of the explosion.

The shock wave consists of an initial positive pressure phase followed by a negative phase, which is probably followed by a small decaying oscillation. In the initial positive phase, the pressure rises almost instantaneously to a maximum and then decreases linearly to zero, and the suction phase follows. The total duration of the combined positive and negative phases is about 1/30 of a second. For a 70 pound charge, Zuckerman has said that the positive phase lasts .006 or the negative .030 second. In the case of a 60 pound charge the velocity is almost 1500 feet per second at 30 feet from the charge. The wave pressure is highest in the region of the explosion and falls off rapidly the further it moves away. Thus, 15 feet from a 125 pound charge, the hydrostatic pressure may be of the order of 220 pounds per square inch, whereas 50 feet away the maximum pressure recorded will not be more than 10 pounds, these figures representing pressure in excess of normal atmosphere of 15 pounds per square inch. Sutherland has said that in some cases of blast compression wave pressures up to 200 atmospheres have been observed.

Much has been written about the "suction" effect variously described as recoil, aspiration, decompression. It seems likely that it is the result of a wave of rarefaction following immediately on the wave of compression. The order of change of pressure to less than atmosphere is of course far less than the positive change and could never exceed 15 pounds per square inch; as above noted, its duration is far greater.

In addition to the effects of change in atmospheric pressure and dynamic effect of a traveling wave, an explosion in a confined space instantly deoxygenates the air and produces high concentration of CO and NO.

It may be seen that the effect upon any object or man will depend, among other things, upon the distance from the center of explosion. Thus Carver and Dinsley describe three zones about the point of detonation. That nearest is the zone of brizance in which all life is destroyed. Hughes and Banks note the rending of soldiers into pieces, disintegration rather than rending, stating that these effects are less noted in the open and not much felt beyond 30 yards. In the next zone CO was under compression, and death without external evidence of injury occurred, with capillary hemorrhages in the nervous system; further out in this zone a state of stupor, and awkward gait were observed; and in zone 3, no serious lesions but later development of neuroses.

Time does not permit of a discussion of the manner in which blast concussion acts upon the human body. In relation to the lungs, it is now largely thought to be the result of the impact of the pressure wave upon the chest wall and not a lowering of alveolar pressure by the suction wave. In relation to injuries of the nervous system, older writers compared the effect to caisson disease, Thomas speaking of the sudden snatching away of atmospheric pressure around the body by the voracious vacuum suddenly produced outside. However, although the order of the change of pressure from the height of compression to the lowered point of decompression is quite large, the time during which the change is taking place is too short to permit escape of gas from the blood. Some transmission of increased intrathoracic pressure may occur, and although it is conceded that when a liquid body is immersed in an atmosphere of increased pressure, all parts of the body instantly attain the same pressure, there is a possibility that intracranial pressure does not follow the pressure change of the ambient air instantaneously, since such changes must act through the viscous elastic vascular bed.

Hooker and Fulton have raised the question as to whether the symptoms of air concussion were not similar to traumatic concussion. There remains the question of pleural shock and fat

emboli. De Guiterrez-Mahoney has reported that in concussion widespread demyelinization of nerve tracts followed by the transient appearance of fat droplets throughout the cerebral substance can be detected; outspoken fat embolism may also result. The fat droplets and emboli tend to disappear within three or four hours, thus explaining the failure to find them in tissues of animals killed and fixed after longer periods of time.

As to the effect of the forces of blast upon the body, Sencert, in 1915, described the case of a man who was able to tell how, as he was going forward, a large calibre shell fell less than a meter in front of him and exploded. He fell back and lost consciousness, was picked up and when after 10 hours he was brought to the ambulance, was found to have no wound other than small skin wounds of the right arm, finger and ear. After he had died during the night, an autopsy revealed among other things a large tear at the base of the middle lobe of the right lung and a pleural tear over the left with a herniation of black lung.

Numbers of men were picked up dead in the vicinity of an explosion without external injury. Isolated reports of the presence of lung injury may be found: Mairet and Durante, Russca of Berne, and Crile described such injuries in animals exposed experimentally to nearby explosions. It was not, however, until the present war that there was a general recognition of the prevalence of lung injury in association with blast. As pointed out by Fulton, Hooker's experimental studies, published in 1924 and arousing little comment, afford the most thorough experimental analysis as yet available. In his experiments, likewise, hemorrhagic lesions of the lungs are described. The more recent experiments of Zuckerman graphically show the vulnerability of the lungs to blast. Although deaths from uncomplicated primary blast are rare in civilian areas, many well authenticated cases have been reported. What was a mystery from 1914 to 1918 has become a banality.

To introduce the subject of injuries to the nervous system an abstract of one of Mott's early cases may be cited. A soldier became rather nervous at the Somme and later underwent intense bombardment for some four hours. Although he said he "could not stand it much longer," he carried on for twelve hours more, when perhaps six shells went over, one of which burst about 10 feet away just behind the dugout. The first day of the bombardment he was tremulous and depressed, later coarsely tremulous in the limbs. Following the nearby burst of shells, there was crying and inability to walk or do any sort of work. Questions were not answered. The pupils were dilated. On the same evening the man was admitted to the field hospital in acute mania, shouting "Keep them back, keep them back." Thus far the description could in a general way fit hundreds of cases, but on the morning of February 24th he awakened apparently well, then suddenly died. With the exception of some small scratches on the anterior chest there were no signs of external violence. Both lungs were edematous and the left lower lobe showed considerable hemorrhage. Hemorrhages were found throughout the brain in the corpus callosum, internal capsule, pons and bulb. In addition, generalized chromatolysis of nerve cells comparable to those described by Crile in the case of exhausted and wounded soldiers was found.

That injury to the central nervous system can occur without evidence of external wounds has been amply reflected by the literature of the World War. A few instances may be mentioned:

Cases of paraplegia — Jean Heitz, Babinski, Claude and Lhermitte, Ravaut, Froment, Guillain and Barre, Hurst. Cases of hemiplegia — Marie and Levy, Guillain, Hartzbecker, Souques, Megevand and Donnet. Hemorrhage in cerebrum and medulla — Leriche. Hemorrhage in the optic thalamus — Leri. Cases of meningeal hemorrhage, — Guillain, Leriche, Soukhanoff. Pupillary and sphincteric reflex. Disturbances and minor changes of increase of cerebrospinal fluid pressure, increase of protein, xanthochromia and hemorrhage into the subarachnoid space.

Extremes of opinion were held as to the relation of blast concussion and the neuroses. Roussy believed that it is exceptional for explosions a long way off to produce organic lesions, and Guillain that organic lesions in such cases are frequent. The former believed that the nervous troubles which result should, in the

majority of cases, be classified among the so-called hysterical disorders, an opinion concurred in by most British and American writers; the latter, Guillain, believed that "many patients are wrongly considered as pithiatric, hysterical, exaggerators or simulators." Between these extimes is the opinion of Claude that, whereas most of the cases observed in the interior are psychoneurotic, it is possible that the functional disorders are kept up by slight structural and physiological changes.

I have seen numbers of men who, subjected to the blast of nearby exploding shells, had slight signs of organic disturbances. When shortly these signs disappeared, they did not develop signs of a neurosis. Many have commented upon this. Likewise, many had been exposed to changes in pressure who did not later develop a neurosis and the order of the change in pressure seemed to have been the same as in those who developed a neurosis. The symptoms of later developing neurosis after the immediate signs of concussion have disappeared, perhaps in some while they still persisted, differed in no way from those of the neurosis which occurred when the circumstances of blast were absent, and from some of those occurring behind the battle front. Nevertheless, we do not know the character of the changes produced by blast nor their relation to an after developing neurosis.

The health of doctors living in hospitals is an important matter. It deserves careful consideration. Each medical student on graduation from his medical school should receive a card giving a complete report of his tuberculin test and roentgen examinations. Each hospital should make a rule to continue with this record by requiring chest films of its internes at six-month intervals. Large hospitals dealing with vast numbers of patients should go even further. They should require their internes and residents to have chest films at three-month intervals. If a rule of this sort were made general, tuberculosis in the resident staff would be recognized more quickly than it is at present, and unnecessary loss of time spent in treatment would be saved. Reginald Fitz, M.D., Jour. Amer. Med. Assn., Sept. 27, 1942.

In reactivation of arrested tuberculosis, pregnancy and birth are relatively unimportant when compared with work and worry and the loss of sleep caring for a colicky baby. Lewis J. Moorman, M.D., Trans. of Nat. Tuber. Assn., 1941.

A CASE OF GRANULOCYTOPENIA WITH SEVERE ANEMIA AND STAPHYLOCOCCEMIA

Where the Only Etiological Factor Was the Use of Aspirin in 40-60 Grain Doses Daily for Years

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Granulocytopenia has been noted as occurring after a number of drugs. Aspirin has been blamed for causing this condition but is certainly not a frequent causal factor. A patient recently under observation offered many diagnostic difficulties, with aspirin as the only probable causal factor.

CASE REPORT

A young woman, 21 years old, a graduate of the West Suburban Hospital Training School for Nurses was refused by the army in 1941 on account of overweight. Her basal metabolic rate at that time was -14 and small doses of thyroid and a reducing diet were prescribed with a resultant loss of weight over a years time of about 30 pounds. In June 1942 she discontinued treatment and gained 5 pounds. She later accepted a position where prophylaxis against scarlet fever and diphtheria were required. She had rather severe reactions to the first two scarlet fever injections and because she appeared pale and tired the nurse refused to give her the third on August 17 and referred her to her physician. He had a blood count made which showed 2,090,000 red cells and 500 leucocytes. No differential count was made. She was given liver extract and hospitalization was advised but she preferred to remain at home believing that rest was all she needed. On August 20 she was found to have a fever and was sent to the hospital. On August 22 a complete blood examination was made which showed 2,050,000 red cells, 950 leucocytes, 42% hemoglobin, giving a color index of 1. A differential count gave 5 polymorphonuclear leucodytes out of 50 cells counted, the balance being lymphocytes. The size and shape of the red cells were normal and there were no nucleated red cells. A blood culture was made and tests were made for typhoid and undulant fevers. An X-Ray of the chest was negative. On August 24th the patient had a violent chill followed by a temperature of 104.6 with a pulse of 120 and respirations 24. Examination for the plasmodia of malaria was negative. The urine on the same day showed specific gravity 1010, a faint trace of albumen, and on microscopic examination a few red blood corpuscles and pus cells but no casts. On August 26th a blood examination

showed 2,290,000 red cells, hemoglobin 40%, giving a color index of 0.9, and 550 leucocytes of which 23 out of 25 cells were lymphocytes and only 2 were polymorphonuclears. There were 330,000 platelets.

On going back over her previous history it was found that she had had the usual diseases of childhood and that she had had frequent headaches from the time she was in grammar school. She had taken aspirin for these headaches in 10 grain doses and had averaged 40-60 grains a day for several years. A short time before she came under observation she had a slight infection of her forearm.

The diagnosis presented considerable difficulty. The granulocytopenia was the outstanding clinical feature but the ulcerative throat lesion usually found in these patients was lacking and the degree and type of anemia was unusual and suggested some type of primary anemia. Aplastic anemia had to be considered in view of the severe anemia and leucopenia but the normal platelet count made this diagnosis unlikely. Acute alymphemic leukemia was suggested by Dr. Trimmer and a sternal puncture was done by Dr. Lawrence on August 28. Smears from this were found to suggest aplastic anemia rather than acute leukemia. Clinically however the important feature was the granulocytopenia and it was felt that the treatment should be directed towards this feature.

The patient was found to belong in Group "A" and transfusions of one pint of blood were given daily after August 26. She was given 1 c.c. of liver extract a day from August 22 to 28 after which she was given 2 c.c. three times a day of Armours Extract with the idea that a less refined preparation might be better than one more refined. She was also given 10 c.c. of pentanucleotide three times a day from August 27 to Sept. 1 when it was stopped on account of local irritation about the place of injection.

The temperature curve from August 22 to 27 was that of a sepsis showing a marked up and down curve with chills occurring as a rule at the high point of the curve. These chills were followed by drenching sweats. After August 27 the temperature was more of a continued type and ranged from 104-106. The chills were less marked but the sweats continued. No growth was found on the blood cultures taken on August 25 and repeated on August 29 till September 1 when both showed a growth of staphylococcus aureus and the same was found on September 3 on a culture made on the second. All of these organisms were hemolytic. While the staphylococci are frequent contaminations it was felt that the presence of the same organism in three different cultures precluded the possibility of contamination and warranted a diagnosis of bacteremia. There was no evidence of endocarditis.

Septicemia had been considered earlier and the question raised as to whether to give one of the sulfa drugs. In view of the granulocytopenia it was thought inadvisable to give one of these remedies until after the blood culture had been reported positive. Then it was thought best to give one of these drugs and on Sept. 2, 5 grams of sulfathiozole were given intravenously and repeated once the same day and again on the next day. On September 4 five grams of sulfadiazine were given intravenously and 50,000 units of staphylococcus antitoxin were given intravenously in divided doses. The sulfa drugs were given in 1000 c.c. of normal salt solution and on September 4 the blood concentration was 2.8 mg per 100 c.c. The stools throughout were frequent, and usually liquid, dark colored and showed blood by microscopic and chemical examination. There was no purpura until late. The clotting time was 17 seconds for the patient and 20 for the control, and the clotting activity was 110% of the control. The vitamin C content of the blood was within normal limits. The blood examination remained as reported above but on September 4, the red cells were 3,190,000, the leucocytes 1100 and the hemoglobin 70%. The differential count showed 71% polymorphonuclears, 261 lymphocytes, one eosinophile and 2 monocytes. There were no pathological findings in shape size etc, and no nucleated red cells. Outside of this very moderate increase in both red and white cells there was no benefit from all of the treatment the patient was given and clinically the course was steadily downward and death occurred on Sept. 5. The clinical diagnosis was septicemia in a patient with marked granulocytopenia and severe anemia.

An autopsy was done by Dr. W. F. Mavrelis the temporary pathologist of the hospital. His chief findings were:

1. Focal and confluent areas of bronchopneumonia in all lobes.
2. Bilateral fibrinous pleuritis.
3. Subcutaneous, subepicardial, pericardial, and renal pelvis hemorrhages.
4. Moderate eccentric hypertrophy of the heart.
5. Parenchymatous degeneration of the myocardium, liver and kidneys.
6. Passive congestion of the liver and kidneys.
7. Infectious hyperplasia and passive congestion of the spleen.
8. Ulcer in the terminal portion of the ileum.
9. Hyperplasia and suppuration of the lymph nodes near the cecum.
10. Hyperplasia of the bone marrow.
11. Blood dyscrasia of some type; on the basis of the ulcerative process in the ileum this was thought to be acute leukemia but on microscopic examination the ulcer was found to be of ordinary type showing no lymphatic tissue as in leukemia. Smears

from the bone marrow showed mostly immature lymphocytes and a very few granulocytes. The final diagnosis was granulocytopenia and the ulceration in the ileum was thought to have the same relation to the process as the ulcerative process usually found in the pharynx.

The etiology of the granulocytopenia had been the subject of considerable consideration. The long continued use of aspirin in rather large doses has been considered. The reduction treatment she had undergone with very moderate doses of thyroid would hardly seem able to give rise to this picture. The scarlet fever prophylaxis would also seem not to be an important etiological factor. Aspirin has been considered to be a causal factor and seems to be the only possible factor in this patient.

SUMMARY

A young woman came under observation with a severe anemia and particularly granulocytopenia, with a staphylococcic bacteremia. In spite of the treatment usually given these patients she succumbed and the diagnosis was confirmed by autopsy. There was no ulceration in the pharynx but there was an ulcer in the terminal ileum similar in type. There was also a severe anemia resembling a primary anemia but showing a normal platelet count. The only etiological factor was aspirin in 40-60 grain daily dosage over a period of years.

PASTEURIZATION OF ALL DAIRY PRODUCTS ESSENTIAL IN CONTROL OF BRUCELLOSIS

Careful pasteurization of all dairy products is an essential safeguard against milk borne brucellosis (Malta or undulant fever), it is pointed out in *The Journal of the American Medical Association* for January 30 in a report on a milk borne epidemic of the disease in Marcus, Iowa. The report is presented by I. H. Borts, M.D., Iowa City; D. M. Harris, M.D., Le Mars, M. F. Joynt, M.D., Marcus; J. R. Jennings, B.A., and Carl F. Jordan, M.D., Des Moines.

From their findings the investigators also advise that hogs should not be permitted to run on the same lot with dairy cows and that prevention of the occurrence of brucellosis in human beings requires a continuing program and effective measure for the eradication of the disease among farm animals. The epidemic at Marcus, involving 77 persons, was caused by a strain of the organism causing brucellosis which was traced to a raw milk supply. It was found that hogs had been allowed to mingle freely in the same pasture with the dairy cows.

CONCERNING THE ACCOMMODATION BEFORE AND AFTER HEAD INJURY

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In a previous communication seventy-two cases of head injury were reported.[1] Study of that series tended to prove that the difficulties in reading and the headaches of which these patients so frequently complain, were not due to a loss of accommodation, for sixty-five per cent of the patients in that first group had an accommodative power within normal limits as defined by Duane.[2] Automobile accidents having become more common,[3] many patients previously examined have sustained severe head injury and a comparison between the accommodative power and muscle balance before and after head injury can be made in such instances. A review of these later cases demonstrates again that the loss of ability to read with comfort is not due to diminished accommodative power, muscle imbalance or poor vision,[4] but rather to disturbance in "the organization of the function of reading" as suggested by Monroe.[5]

The origin, development, and complexities of this "organization" in contrast to and in relation to the "function of reading" itself are better appreciated with a further perusal of the writings of Duane,[6] Treacher Collins,[7] and Edward Jackson.[8] This "organization of the function of reading" embodying as it does visual acuity, binocular vision, perfect muscle balance, memory and interpretation, necessitated the greater production of nerve cells, coordinating fibres and nerve centers.[7] The development of this synchronization paralleled the increase in the number and the size of the cerebral convolutions and being late in appearance it is more prone to variation and defect with an attendant susceptibility to injury and disease than the so-called embryologically older structures and functions.[4]

It has long been known, but not recognized generally, that skull fracture of itself is not as important as is the type and the extent of brain tissue injury. Patients' statements as to the state of unconsciousness following head

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*Presented before the Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Springfield, May 19, 1942.

injury are not reliable, nor are many radiographs of the skull as to fracture. Experimental work and now practical experience tend to demonstrate[9] that patients may remain conscious despite anemia of brain tissue from hemorrhage due to loss of an extremity together with serious injury to cerebral tissue. Loss of consciousness in head injury results from minute changes in the nerve cells of brain tissue due to traumatic stimulation of these cells.[9]

During the acute stages of head injury the patient should be left to the neurosurgeon. Only at such a time as he may decide that the patient does not need his observation as to the ocular signs of the progress of the results of the injury should we be allowed to interfere. Our dilation of the pupils masks one of the most important signals of changing cerebral conditions and should not be resorted to until pupillary reactions are of no further diagnostic importance. When the patient is up and about then only may we study the action of the extraocular muscles and the pupillary reactions to light, accommodation and mydriatics. Only then is it proper for us to record the central vision, peripheral fields, refraction and accommodation and to note the condition of the optic discs. At all other times our investigations should be carried on only upon the request and consent of the neurosurgeon. Later in a measure we may aid in determining the extent of the disability, correcting in part some of the disfunction, and in waiting our turn not interfere with mydriatics nor manipulations in the daily or even hourly observations by the neurosurgeon which are so essential to the welfare of the patient in many of these serious injuries.

It has been my experience that most tables of accommodation indicate a maximum amount too high for children and too low for adults, and a minimum amount of accommodative ability too high for children and often too low for adults. Taking Duane's[2] table, however, as a guide and standard, and with emmetropia established in the patients, in this series of fifty-seven examined before and after accident, thirty-eight had an accommodation within normal limits before and after head injury. In this group all were over twenty years of age. Of the fifty-seven, sixteen had a subnormal accommodation before and after accident, and of these, ten were twenty years old or less, five were twenty to thirty years old, and one was forty. Only one patient (fifty-one years old) had a normal accommodation before and subnormal after injury. A man thirty-five years old had an accommodation within normal limits following head injury but had had at many previous examinations a subnormal amount. A lady, forty-eight years old at the time of accident, had an accommodation below normal in the right eye and within normal limits in the left eye but in the lower brackets for her age following severe head injury. She had had a poor accommodation when examined on many previous occasions always unequal in the two eyes and lower in the left. When examined two years later, and for the second time following the accident, the accommodation was equal in the two eyes and within normal limits, but reading was not comfortable.

TABLE I

The Accommodation Before and After Head Injury	
Accommodation normal before and after injury	38
All over twenty years old.	
Accommodation subnormal before and after injury	16
Ten twenty years old or less.	
Five, twenty to thirty years old.	
One, forty years old.	
Accommodation normal before and subnormal after accident	1
Accommodation subnormal before and normal after accident	1
Accommodation unequal	1

TABLE II

The Muscle Balance Before and After Head Injury	
Esophoria before and after accident	28 cases
Esophoria before and exophoria after accident	4 cases
Esophoria before and orthophoria after accident	2 cases
Exophoria before and after accident	18 cases
Exophoria before and esophoria after accident	2 cases
Exophoria before and orthophoria after accident	0 cases
Orthophoria before and after accident	1 case
Orthophoria before and esophoria after accident	1 case
Orthophoria before and exophoria after accident	1 case

The muscle balance at the distance was recorded before and after the accident. Esophoria was found in twenty-eight patients and exophoria in eighteen. It is true that in a large series of cases examined often and observed over a long period of time where no injury was sustained, a most significant fact noted was not that a muscle balance may remain unchanged or increase or decrease, but that it had changed into some other combination. In such a series of over seven hundred patients where cerebral traumotism had not been sustained, there were no changes, an increase or decrease in one hundred and fifty-five cases, while there had been a change to exophoria and esophoria with or without hyperphoria and to simple hyperphoria in five hundred and eighty-six cases. This large group would tend to demonstrate that changes in the phorias following head injury may be discounted as long as they remain phorias even if changed in amount or character and do not become tropias.

TABLE III

Changes in The Muscle Balance Not Associated With Head Injury

No change, an increase or decrease	155
Change to exophoria and esophoria with or without hyperphoria and to simple hyperphoria	586

CONCLUSION

In a group of fifty seven patients examined before and after head injuries of various degrees, there were no marked changes in the central vision but those which could be accounted for by other causes, there were no marked peripheral field changes or annoying scotomata, the accommodative power had not changed unduly on an elapsed time basis, there were no unusual changes in the muscle balance and no psychoses, yet the majority of the patients complained of headache, sensitivity to noises, and above all, to an inability to read with comfort for a reasonable length of time.[10]

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DISCUSSION

Dr. Thomas D. Allen, (Chicago): I think it is a very fine thing to have this subject brought up. It seems to me that it is just as important to have negative findings brought out clearly as it is to have positive findings because we must form our judment about a case and its management from negative findings as well as from positive findings. If we know the accommodation is not particularly affected by an injury that we would think naturally would affect accommodation, we should know why it is not affected.

I want to thank Dr. Wescott for carrying on the reputation his father had; he was for many years known as the most careful refractionist in Chicago. I just asked Virgil if his father was as keen about taking the accommodative near point as was Duane. I worked with Duane for some time and I know how very assiduous he was in examining every patient. Before refraction with mydriatic, he would very carefully do a manifest refraction and measure the accommodation of each eye alone and of both eyes together. After the drops were put in, at ten minute intervals, he would measure the accommodation again; when the difference between the near point and the far point of accommodation was reduced to a measurable half diopter he could proceed with the trial case examination. He would then put on a +1.00 sphere and send the patient into the dark room and for us to check him.

I would like to ask Dr. Wescott about the one case in which he said the accommodation was apparently affected after injury, possibly by the injury. Was the iris examined with the slitlamp carefully, to see if there was any injury to iris tissue, particularly the pupillary margin? Of course we cannot see the ciliary body, and the iris itself takes very little part in the

actual accommodative process, but it might be possible that the sphincter muscle was injured. If it was not apparently injured by the trauma, what, in your opinion, would be the cause of the loss of accommodation in this one particular patient?

I think it is very valuable that we have the result of the tremendous experience the Wescotts have had in the subject of refraction.

Dr. Louis Bothman, Chicago: I would like to ask Dr. Wescott if he found that the accommodation was in any way responsible for the difficulty in reading and the headaches. To what does he attribute the difficulty in reading? I was interested in this, in addition to the accommodation, since that apparently is not the cause.

Dr. Gail Soper, Evanston: I wish Dr. Wescott would tell us what, in general, he finds has happened to accommodation after an acute illness, when the resistance is low. How much difference is there in accommodation during the next several months?

Dr. Virgil Wescott, Chicago (closing): I am grateful for your discussion of the paper. The one patient 51 years of age who had a normal accommodation before injury and a subnormal accommodation after injury has never been a well lady. She has had many illnesses during her life. The only thing about her iris which I noted was that the pupils were small (contrary to expectation), reacted and dilated well and that there was no evidence of a break in the root or the margin.

In answer to Dr. Bothman, I believe that the difficulty these patients have is not in the disturbance of the function of reading itself. They can read but not for any length of time. I believe that the elements which make up the organization of the function of reading in contradistinction to the function itself are at fault.

In answer to Dr. Soper, when we had a small epidemic of influenza about five years ago I noticed that nearly every patient who came in complaining of difficulty in reading had just recovered from influenza and all had a poorly sustained accommodation. At the end of six weeks they were again able to read with comfort.

Dr. Louis Bothman, Chicago: In connection with Dr. Soper's question I should like to call attention to an observation I have made over a period of years in connection with debilitating illness and early presbyopia. I have seen three cases in which complete refraction under atropine gave the full correction, but the patients required a +200 add for reading. These three cases all had pulmonary tuberculosis. Early presbyopia does occur with pulmonary tuberculosis. This fact, as far as I can learn has not been mentioned before.

PATHOLOGICAL FINDINGS IN EYES ENUCLEATED FOR GLAUCOMA DUE TO SARCOMA OF THE UVEA

LOUIS BOTHMAN, M.D.
CHICAGO

Among 40 eyes with sarcoma of the uvea, there were four in which sarcoma was not suspected when the eyes were removed.

In such eyes, which are most often removed because they are blind and painful, the anterior segment pathology is such that a view of the interior of the eye is not possible or is too blurred for careful examination. Two of the four eyes in this group were operated on to reduce tension in an effort to save the globe. Several operations for this purpose have been advised in the past 10 years.

I think that the finding of sarcomas in such blind eyes offers an object lesson to all of us; hence this presentation.

These eyes should serve as a warning for us to remove blind, painful eyes, when no study of their interior is possible, unless the pathogenesis is known for certain. If one has watched an eye with a central vein thrombosis gradually become blind and painful, it is safe to attempt a detension operation to save the globe. If nothing is known about such an eye — it should be enucleated.

CASE I

A male, aged 28 years, was kicked in the head by a horse, on April 30, 1929, and blinded in his right eye, which was painful. When first seen by Dr. Lyman Copps on May 8, 1929, there was a deep mixed injection, edema of the cornea, swollen iris, numerous posterior synechiae, large ones at 11:00 and 5:00 o'clock, and a few keratitic precipitates. The fundus could not be seen because of a flocculent precipitate in the pupillary space and a swollen lens. There was only perception of light and a tension of 35 mm. of Hg. The eye was enucleated on May 15, 1929.

Examination of the serially sectioned globe revealed the presence of a tumor. The tumor lay in the posterior temporal quadrant. It arose in the choroid 2.5 mm. temporally from the optic nerve and extended temporally for 12 mm., vertically 17.6 mm., and into the vitreous for 18 mm. It was lobulated, being divided roughly into a horizontal oval portion and a

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globular portion. It was very dark brown and composed chiefly of round cells and was poorly vascularized. The retina was completely detached, was atrophic and had granular pigment on its posterior surface in that portion nearest the tumor. The choroid adjacent to the tumor had dense, round cell infiltration and a much more diffuse infiltration distant from the tumor. The sclera had not been invaded. The optic nerve was atrophic. There was a moderate atrophy of the retina with ectropion of its pigment on the temporal side. There were small posterior synechiae and an equatorial cataract. There were also anterior root synechiae in most sections. The patient was living and well on January 9, 1941.

CASE II

A female, aged 28 years, was first seen on February 23, 1938, by Dr. Lyman Copps, complaining of discomfort in her left eye for four days, and severe pain for two days. At that time the eye was blind. The pain became more severe the following day accompanied by emesis which persisted.

Examination revealed a darker left iris, very marked injection with a subconjunctival hemorrhage in both nasal quadrants. The sclera in the areas between 10:00 and 2:30 o'clock and 4:00 and 5:30 o'clock was darkly discolored. The corneal epithelium was edematous. There were no keratitic precipitates. The aqueous was clouded. The pupil was 3.5 mm. There was a grayish reflex from the cavum oculi. No details could be seen. Transillumination was negative. There was no perception of light. Tension was 67 mm. of Hg. The patient had a small hemangioma on the left cheek near the eye and many pigmented moles on the body.

On 2/24/38 a paracentesis of the anterior chamber was done. The following day there was less pain and the chamber was reopened with a spatula and 30 R exposure of x-ray was given. The tension was 72 mm. of Hg. The patient was more comfortable for a few days; but on March 2, 1938, the tension was 67 mm. of Hg., there was severe injection, anterior synechia at 9:00 o'clock, and a shallow anterior chamber. The eye was enucleated and a tumor was found The patient was living and well on December 11, 1941.

After fixation and washing a superior calotte was removed. About 4 mm. from the limbus there was a tumor lying against the choroid and adjacent to the optic nerve above, slightly more nasally than temporally, and measuring 11 x 7 mm. The tumor in its greatest extent measured 12.3 mm. vertically, 12.5 mm. horizontally, and extended into the vitreous for 11.5 mm. That part nearest the choroid contained many pigmented cells, but the major portion was unpigmented, richly vascularized round cell sarcoma, containing several areas of necrosis. There was hemorrhage in the choroid adjacent to the tumor, there were small hemorrhages between the choroidal tumor and sclera, smaller ones on the surface of the tumor, and larger ones beneath the detached retina on the nasal and temporal sides. The retina was completely detached and atrophic. There were three antero-posterior folds, two large ones, and one small one. The optic nerve and its sheaths were free from involvement and no cells were seen perforating the sclera. The choroid, ciliary body, and especially the iris, were very darkly pigmented (almost black). Neither of the latter were invaded by the tumor. There were several localized posterior synechiae; anterior synechiae on the nasal side below, and marked sclerosis of the pectinate ligament on both sides below. The anterior chamber was deep in the upper one-half, and contained exudate and many granular pigmented cells which were near or on the surface of the iris. There was an unhealed corneal perforation from the anterior chamber puncture.

CASE III

A male, aged 59 years, was first seen by Dr. S. A. Berke on January 31, 1939, when he complained of poor vision of his left eye for three months. There was no pain or injection.

Examination revealed a balloon-like detachment of the retina in the lower nasal quadrant. No hole was found. Transillumination was negative. An operation for detachment was advised but none was done. He returned in June 1939, complaining of severe pain and redness of the eye which was blind.

Examination revealed a marked ciliary injection, hazy cornea, opaque lens, and a tension of 70 mm. of Hg. An Elliott trephine operation was done in an attempt to reduce tension and to relieve pain. One week later the pain was severe, and an enucleation was done in December 1939. The patient succumbed to a heart attack in August 1940.

The globe was opened immediately after enucleation, and divided into two portions. The tumor was found in the lower nasal quadrant, in the anterior one-half of the globe.

This was a mixed, round and spindle cell sarcoma (chiefly round cells.) There was moderate vascularization. The tumor arose from the choroid just posterior to the plain part of the ciliary body. That portion in the choroid was very dark brown, while the main globular portion contained microscopic pigment. The tumor extended posteriorly 19 mm. in the choroid, was 13.1 mm. in its vertical extent and protruded for 12 mm. into the vitreous cavity. Its convex surface contained granular fragmented red blood cells. There was a single 2x4 mm. area of necrosis near its center.

The iris contained a small brownish discoloration on its nasal side with tumor cells like that of the principal lesion. No connection between this and the main tumor was demonstrated. There were localized areas of round cells in the iris and fewer in the choroid.

An iris coloboma (operative) was seen above and anterior root synechiae below. There was much

pigment in the Spaces of Fontana and on the posterior cornea in the angles. The pectinate ligament was sclerosed. There were many erythrocytes on and in the iris.

The lens was cataractous and fragmented (artefact from hemisection of the globe). There were localized posterior synechiae. The retina was detached, cystic, and atrophic. The optic nerve was atrophic and only slightly cupped. There were no tumor cells in the sclera or the emissary vessels.

CASE IV

A female, aged 53, a patient of Dr. William Grove, complained of gradual loss of her left vision over two years, during which time she had attacks of left-sided headache. Five months previously she had had an operation to reduce the tension. General examination had been negative. The left cornea was opaque. There was moderate injection. At the superior limbus was a scar from a trephine operation which had closed. The fundus could not be seen because of an opaque lens. The tension was plus 3. The eye was enucleated on February 16, 1939. The patient had not been seen since leaving the hospital.

Study of the sectioned globe revealed that there was a sarcoma arising from the nasal ciliary body. The choroid was involved in a darkly pigmented, flat lesion extending from the ciliary body to within 2 mm. of the optic nerve. From this flat portion was a sparsely pigmented tumor measuring 6 mm. anteroposteriorly, 5.8 mm. vertically, and extending 6 mm. into the vitreous.

The spherical tumor was chiefly of small spindle cells, contained only linear granular pigment as irregular lines, and was poorly vascularized. The ciliary body in the region of the tumor was destroyed. There was a marked round cell infiltration in the choroid and iris adjacent to the tumor. The sclera was not invaded. There was no necrosis or hemorrhage in the tumor. The tumor pressed against the small cataractous lens whose anterior surface was pushed against the posterior cornea.

The retina was completely detached, but this was a flat detachment of only a few mm. The optic nerve was atrophic.

The iris had a complete coloboma above and was atrophic throughout. There were anterior root synechiae in most sections. The atrophic iris at the chamber angles was so distorted that the pectinate ligament or Schlemm's Canal could not be identified.

At the site of an old healed corneal incision there was much granular dark brown pigment. The cornea, especially in its anterior one-half, was involved with dense old scars and many small blood vessels. Bowman's membrane was thrown into large folds.

Summary: — In all of the four cases presented, sarcoma of the uvea was found in eyes enucleated because they were blind and painful. The clinical diagnosis in all cases was secondary glaucoma. In none of them could the interior of the eye be studied because of the opaque cornea and lens. In two cases operations had been done in an attempt to reduce the tension and save the globe.

CONCLUSION

No detension operation to save a blind, painful eye should be done in any case in which the etiology of the secondary glaucoma is not definitely known. Such operations may postpone the enucleation of an eye which may contain a sarcoma.

Only in cases of secondary glaucoma of known (non-malignant) etiology, such as a central vein thrombosis, are such operations as iridectomy ab externo, vitreous fistula, or cyclo-diathermy, justified in an effort to save the globe.

In all cases of secondary glaucoma with uncertain or questionable etiology, enucleation should be the operation of choice.

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VISION TESTING IN ILLINOIS

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In order to understand the Vision Testing Project which has been carried forward in Illinois during the past six years, under the joint aegis of the WPA and the Illinois Society for the Prevention of Blindness, it is necessary first to understand just what type of agency the Illinois Society for the Prevention of Blindness is and just what sort of agency the WPA is.

The Illinois Society for the Prevention of Blindness was organized in 1916 as a temporary agency, which would have for its main purpose the demonstration to public agencies of the methods by which blindness might be prevented and then to stay on the job and see that they incorporated these methods into their programs without lowering of standards and without political interference.

The WPA was organized by the Federal Government in 1935 to substitute work relief for

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the dole. It was supposed to tap a large reservoir of unskilled workers, some of them in the lower white collar groups. All projects were to be sponsored by public agencies, plus co-sponsorship by a private agency. Therefore, if a WPA project has not been well administered, it is the fault of the sponsoring agency and not of the concept of WPA.

Before 1936 the Illinois Society had been lucky if in any given year they were able to test the vision of 17,000 school children and they were also lucky if they were able to get 1,200 children fitted with glasses during the year.

In 1935, when the WPA was very new, we co-sponsored a project in our Trachoma Clinics which covered work for laundresses, janitors and nurses' aides. This worked out so satisfactorily that in December of 1935 the WPA approached us and asked if we would co-sponsor a vision testing project in the public schools of Chicago.

We said "Yes" under the following conditions:

1. That we would have the choice of staff.
2. That we would be responsible for the training of staff.
3. That we would have the direct supervision of the staff.
4. That we would be responsible for the setting up of reports.
5. That there should be connected with the testing program a correction program.

This last provision we felt was the most important, because the Illinois Society for the Prevention of Blindness has always objected very strongly to the discovering of defects in school children where no plan was made for correction of the same.

The WPA was at first undecided about the correction program because they were not allowed to make home calls, but we finally talked them into it.

At the beginning we set up the following staff:

1. A group of testers.
2. A group of recorders.
3. Office help to include typists and filing clerks.
4. One uncertified supervisor to work closely with us.

Training. — Assisting by the ophthalmologists of Chicago a week's training course at each school vacation period was arranged for. This course included:

1. Anatomy of the eye.
2. Diseases of the eye as they occur in school children.
3. Refractive errors.
4. Squint.
5. Routine for giving vision tests.
6. Public relations with the schools.

This course ended in a written test on which the workers were graded and those who did not qualify were eliminated. The workers were trained to give the regular Snellen Chart examination.

A certain procedure was worked out for the workers:

1. Arrangements were made with the schools. A copy of a list of observable behaviors was handed to all the teachers.
2. A room that had sufficient light and at least 20 feet for the testing was secured.
3. Illinois Society record blanks were used.
4. A system for routing the children to and from the testing room was worked out.
5. The work sheets, showing the defects were grouped into 1X, 2X and 3X cases. (1X cases are those from 20/30 to 20/50; 2X are those from 20/50 to 20/70; 3X are those having 20/70 or below.)
6. Postal cards were sent to the parents of all children showing an eye defect, with the recommendation that they take their children to someone who could make a complete examination of their eyes.
7. Individual record cards were made on every single child having defective vision. These cards show the name of the child, his address, school to which he goes, the degree of the defect, the vision without glasses and the vision after new glasses were fitted, together with the name of the doctor who did the work on the case.

When we started our correction program we approached the Chicago Ophthalmological and asked the doctors if they would take cases in their office at $2, $3, and $5, in order to swing some of the work away from the clinics. Seventy-five doctors registered with us to do this work.

At the end of the first year we took eight of the best qualified staff members and trained them for home calls for the 2X and 3X cases. In order to get permission to do this we had to take a trip to Washington and make a special plea through Dr. Rice to the WPA Board there.

In 1938 the project was extended to cover the whole state and to include hearing tests. This part of the project has always been more difficult to administer than the Chicago one, because there were fewer clinic facilities, the rural school population is smaller and the correction programs were very difficult to put into operation. In some school districts the local nurse did not want the WPA to do the work, but did not get around to doing it herself.

It may be interesting to note that since 1936, vision tests have been given to 1,466,510 school children in Illinois. Of this number, 77,497 school children were found to have defective vision and in this period 52,807 children had their vision corrected. It also might be interesting to know where the children went to have their vision corrected. From March 1, 1941 to March 1, 1942 we have records of 15,007 corrections. Of this number 5,427 went to ophthalmologists; 2,949 went to clinics and 6,631 went to optometrists.

True to its promise when it started, WPA has cut its curve with the rising employment curve. July 1, 1941 the WPA took a 50% cut and another 50% cut is anticipated for July 1, 1942. These services will not be available for vision surveys in the future where correction programs with documented reports are not guaranteed and where written monthly reports of such corrections are not made.

We think we have demonstrated in Illinois the feasability of such a project. We know of no other State that can show the wealth of figures in detail that this project shows. We are very, very anxious to have the doctors interested in it and active in it.

DISCUSSION

Dr. C. C. Bunch, Evanston: It is with a great deal of satisfaction that I have heard Miss Hayden's report this morning. I know nothing about eyes, except that I use my own and wear glasses. I am interested chiefly in the second project she mentioned, that of the hearing test program which is being conducted in the state. I knew nothing about this last summer when I moved to Illinois, but I found there was a project whereby hearing tests were being conducted under the WPA. As Miss Hayden said, the material collected in determining the percentage of visual defects does not amount to much unless something is done about it. The same thing applies to hearing tests. The matter of determining how many children there are with defective hearing amounts to little or nothing, unless something is done about it.

Last year the State of Illinois passed a law requiring hearing tests to be done each year on school children. There are similar laws in some other states. This does not in itself do any particular good unless there is some sort of organization which can take care of the defect when it is found. Miss Hayden's organization, which has been active for a number of years and has had the advantage of the experiences over these years, has been of very significant benefit so far as children and future citizens are concerned, and shall I say also, so far as the finances of ophthalmologists are concerned. This is a dollar and cents program, and should be considered from that standpoint as well as from the humanitarian standpoint. These children are our potential citizens. If they have defects they are likely to be lower in skill, lower in earning power, and with the present crisis we are in we must have all the citizens at the highest possible state of health and ability.

It seems to me that such a program must logically be in the hands of those who understand it. With the eyes, that puts it directly in the lap of the ophthalmologists. The same thing is true of hearing tests. If anything good is going to come of this, it is in the lap of the otologists of the state. As I understand it, most men downstate do eye, ear, nose and throat work, rather than specializing in one, so it looks as if the same group will take care of both problems.

I do not know whether you know that in the WPA project testing hearing in New York, 5 to 7 per cent were found to have auditory defects. On the basis of this, the New York legislature passed laws requiring hearing tests throughout the state. Obviously, they will be of minimum value unless something is done about it. Fowler says that approximately 70 per cent of such children can be corrected; Newhart of Minneapolis puts the percentage at nearly 50 percent. If 50 per cent of these children can be benefitted early, we are going to help just that much toward the value of our citizens. It is also interesting to read the reports of the draft boards, that about 5 per cent of young men are rejected because of defective hearing. I have a slide which was given me by the people in charge of the hearing program, and it was astonishing to me that nothing more has been done so far as correction of these hearing defects is concerned.

The WPA is organized on the basis of a more or less temporary plan, and it seems to me that hearing defects are always going to be with us in spite of all the new drugs and other things. The medical society can do nothing more to help than to give active cooperation, both as to visual and hearing defects.

Dr. Harry Gradle, Chicago: The implications involved in this work are far greater than appear on the surface. Late in the thirties I was asked to report to Washington on this work. It attracted the government officials as being the basis for similar work throughout the country, and at a conference we were informed that the work done in this State would be a model. At that time they were still thinking in terms of easy money and large sums, and they set the sum of $25,000,000 a year as necessary to carry it on throughout the country.

The problems involved are great but the difficulties could be overcome. They are watching our downstate efforts in Georgia and Texas. The plans are still available in Washington, and it is the purpose of the Government to carry on this visual correction program, eventually.

In our work in rehabilitation of selective service men we found over 43 per cent between the ages of 21 and 35 to have defects that rejected them from service; about 50 per cent of that number, correctible without too great difficulty. Therefore, under the plan as worked out, after the emergency there will be a rehabilitation program. The unemployable are for the most part unemployable because of physical defects arising in childhood or early youth. The correction of defects will reduce unemployability to the vanishing point and, consequently, will be of enormous ecnomic value to the country . So this program of survey, when followed by a correction program, fits into the rehabilitation program when such correction can be made.

Dr. G. H. Mundt, Chicago: I have talked to Miss Hayden and to Dr. Bunch and various other people about these testing programs in the State, and I think Miss Hayden would like to have the approval of the medical society in the State, and Dr. Bunch is also interested in that. If we can get some type of resolution to be passed by this Section in the business meeting, I think it would be well to consider the advisability of that. I wish Miss Hayden would tell us why she feels she needs the approval of medicine.

Miss Audrey Hayden: I do not like to go ahead with this project without medical approval. That was the reason I came here to explain it to you. We would like to have something like the recommendation which the Section gave in 1936 on the Snellen chart. It helps us greatly if the doctors understand the correction problem, and it is very important to the Illinois Society for the Prevention of Blindness to have medical endorsement.

In using the Snellen chart we get away from the implication of being technicians. We feel that the simplest method of making tests is the best. We have sometimes had arguments with the school people, in regard to the Betz-Telibinocular and when there is something definite to show from the medical profession, that ends the argument. If we could say that the Illinois State Medical Society endorsed this project it would help a great deal.

Dr. H. L. Ford, Champaign: I think we are under definite obligation to Miss Hayden for presenting this subject and that we should offer our unqualified approval. I move that we go on record as offering our approval of this work.

Dr. G. H. Mundt, Chicago: I think we should have a little more in the body of that motion, because it is a difficult thing to give a flat approval of Miss Hayden's talk. I think motion should be made to cover our approval of the program of hearing and vision tests. I believe a committee should be appointed to draft such a motion.

UNUSUAL CASE OF BALANTIDIUM COLI COLITIS

I. Radeff, M.D.
KIRKLAND

This case is of interest on account of its rarity and difficult to find the parasites.

The patient, a white male, 64 years of age, farmer by occupation, on December 17, 1941 complained of frequency, nocturia and difficulty in starting the urine, dyspnea on exertion. These symptoms began one year ago and gradually have become worse.

Family history negative. No previous illness.

Physical findings normal except heart enlarged to the left, rhythm regular; urine negative except for trace of albumen and about 1½ ounces residual urine; large prostate not fixed

He refused surgical interference and was given 25 mg. testosteronepropionate intramuscularly. Six days later after the first injection he developed diarrhea. The temperature was normal. The abdomen was distended but there was no localized tenderness or rigidity. There was some nausea and abdominal cramps. I did not see him until about a month later and found he had had diarrhea almost continually, looked anemic and had lost about 10 pounds in weight. He said the stool was black, mixed with red blood and mucus.

Proctoscopic examination showed two small ulcers about 15 cm. from the anus. He was given Tr. Opii, aluminum hydroxid and kaolin enemas. After this the diarrhea improved, but two weeks later there was another recurrence with blood in the stool. He was put on sulfaguanidine without result. On February 10 the x-ray of the bowels showed nothing abnormal; R.B.C. 3,400,000, W.B.C. 7,600. The fecal examination showed occult blood, no ova, no cyst of ameba, no bacillary dysentery, no mucus.

On February 16, 1942 prostatic resection was done. Three days later diarrhea recurred. Stool examination at this time revealed millions of balantidium coli, very motile.

The literature shows that the balantidium coli is a common infection in swine, easily transmitted to men. Stone and Musgrave reported epidemics of it in the Philippine Islands and among the apes in the tropics.

In the treatment four points were to be considered: 1. The parasites bury themselves in the submucous tisses so this one had to be attacked through the blood. For this purpose emetin was given. 2. Those in the intestinal cavity were attacked by diodoquin. 3. Some of the parasites that were in the crevices of the mucosa and in the cebulum were treated with sodium bicarbonate enema to dissolve the mucus and then followed by quinine enema, 1:1000, 2,000 c. c. 4. The general condition of the patient to be improved.

He responded promptly to this treatment and in 24 hours the diarrhea was checked.

On March 9, 1942 he had another recurrence of diarrhea and a temperature of 103. Fecal examination on several occasions did not reveal any parasites or ova. He was put on the same treatment and the diarrhea subsided. There has been no recurrence since.

This shows that one, sometimes numerous examinations of the feces for balantidium coli, even under ideal conditions is not sufficient to find the parasites or the ova.

Doctor's Son: "Papa, what is middle age?"

Doctor: "It's the time of your life, son, when you would rather not have a good time than recover from it."

SIMPLE FOREIGN BODY REMOVAL

S. D. MESIROW, M.D.
AND
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The subject of discussion is probably a timely one now that we are at war. Recently, certain highly specific detailed methods, with which you are undoubtedly familiar, have been reviewed by the Army and a carefully evolved procedure has been planned for use in the field. With these, at the moment, I am not too much concerned although as I shall try to show later, the application of the particular method to be described seems to me highly desirable both in the field and at the base hospital. I am mainly concerned at the present time with the removal of the foreign body in general surgical practice and the part the radiologist should play in assisting the surgeon.

In reviewing the subject, one is rather amazed at the large number of papers in the literature. One almost gets the impression that, much as doubt is cast on the efficiency of any individual drug when a large number of drugs is used in the treatment of a single condition, any one of the methods used in removal of foreign bodies is not as effective as one might gather.

All of the methods based on the use of mathematical computation to determine the depth of a foreign body fail to a greater or lesser degree to take into account the practical aspects of surgical removal.

A review of the methods of foreign body removal is not the purpose of this paper. I should like to call attention, however, to a paper by Arens in 1925 which describes the roentgenoscopic screen and essentially the method to be discussed in this paper.

One may ask, why the repetition? As is so often the case a method of treatment is frequently lost sight of among the mass of literature and does not command the attention it deserves. One may be forgiven the reminding of the profession that then and now this method was and

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is in our opinion the simplest method to be applied. It has stood the test of years and little if anything can be added that will improve it.

It is generally the practice when a patient comes to the surgeon with the history of a foreign body entering the skin or mucous membrane that he will palpate for the foreign body, or if an opening is present, he will probe for it. If this fails to elicit evidence, he has one of two choices. He will explore immediately at the site of original entry or better still, he will arrange to obtain roentgen films or fluoroscopy so that he will get an idea as to the position of the foreign body in relation to surrounding structures, and will then remove the patient to the operating room and explore.

While surgical removal without roentgen aid seems simple enough, such is not generally the case. Of course, if one is dealing with a massive foreign body, the problem is not difficult. On the other hand, if the body is small, we have known of capable men searching for a period of one hour or more without success in so small a part as the hand, even when films had been obtained previously.

Let me hasten to explain that it is not as ridiculous as it sounds. It is conceivable that, given a small foreign body such as a fragment of a hypo needle, the incision may be made over or close to the foreign body and when the skin or subcutaneous tissues are retracted, exploration would be futile if the foreign body were also tucked away under the retractor. In order to forestall criticism, even if all metal instruments are removed and a palpating finger inserted into the wound, one can conceive that the end or point of the foreign body will not lie in a plane such as to allow palpation. Again, the mere making of the incision and the separation of tissues immediately below may displace the foreign body from the predetermined position by retraction of the tissues themselves. Further, because of slight changes in the position of the part, the surgeon enters at a slightly different plane than the central ray had traversed in making the roentgenogram, with the result that he must search blindly.

The point to be made is that there may be and usually is movement of the foreign body or of the tissues containing the foreign body before or during exploration.

It should be clear, therefore, that intermittent fluoroscopy offers a constant control by indicating continuously the position of the foreign body.

Now as to the points involved:

The basic principle involved is described in the U. S. Army X-Ray Manual, second edition, in the discussion of the "nearest point method." "Palpation at a very near point will ordinarily cause much greater movement of the projectile than will palpation at a remote part of the skin surface." Correspondingly, probing with a blunt forceps will produce greatest motion of the foreign body when the tip of the forceps is closest to the foreign body.

Of immediate importance is the determination as to whether or not the foreign body can be removed with the particular method. By way of illustration, it would be dangerous to attempt removal of a foreign body deep in the lung fields, within the abdominal cavity, or in any place requiring exploration of vital structures. Removal of foreign bodies from the extremities, the chest wall, the abdominal wall, the scalp, or the neck has been accomplished with rapid ease. We have been successful in removing three broken needles from the tonsillar fossa, one from the vaginal vault, and recently one from the nasal cavity. To illustrate the simplicity in all of the latter cases, it took only five to ten minutes to remove the foreign body. In all the instances, surgeons had explored previously without success.

The simplest of equipment is to be desired. Any equipment capable of allowing fluoroscopy will be satisfactory. The only additional piece of equipment is a small fluoroscopic screen covered by lead glass and encased in a holder providing a fairly long handle. This should be so made as to permit sterilization of the screen holder end. The purpose of the handle is to permit the surgeon to work in the field with the minimum of interference. The screen need be only 3 to 4 inches in diameter, the handle up to 15 inches in length. This has been adequately described by Arens.

A simple sterile operating setup including iodine or mercurochrome, sterile linen, anesthetic agents with syringes and needles for local anesthesia, scalpels, forceps (preferably both large and mosquito types), gut and silkworm sutures should be available.

Teamwork between radiologist and surgeon is of utmost importance. Since it will be impossible for the surgeon's eyes to remain accommodated constantly, the radiologist must serve as the eyes of the team until the forceps have grasped the foreign body. This directional probing it to be guided entirely by the radiologist whose eyes are constantly kept accommodated by means of goggles which he can slip on and off his eyes between periods of fluoroscopy.

In regard to asepsis, the only point in question is the sterility of the screen-containing end of the scope since it comes in contact with the hands and instruments of the surgeon. The scope end may be wiped carefully with alcohol or antiseptic agent and wrapped in gauze or towel pack wet with antiseptic until ready for use.

The question of anesthesia is a moot one. There have been a number of papers indicating the explosion dangers of ethylene, cyclopropane, or open ether anesthesia. Local anesthesia or nitrous oxide inhalation are probably the anesthetic agents of choice.

The question of radiation injury to the patient and to the radiologist and surgeon is of greatest importance. In the usual case, the time of the removal has averaged five to ten minutes actual working time from incision or probing into the wound of entry until removal of foreign body, involving at most one to two minutes of actual fluoroscopic time. Using 85PEv, 4Ma, 1mm Al, one obtains radiation equivalent approximating 5r per minute, a relatively insignificant amount. A small cone of radiation is to be used sufficient *only* to just fill the screen of the roentgenoscope. It must be added that continual use of one team might conceivably constitute a hazard due to the possible effects of cumulative radiation depending on the number of examinations and safety of equipment.

Specific Procedure is as Follows:

1. Determine whether the foreign body lies in an accessible position and can be removed. Mark point of approach on skin. Keep part stationary.
2. Prepare skin with iodine and alcohol.
3. Administer anesthesia.
4. Open wound or make incision in skin at point of approach and insert closed tip of forceps into incision. A curved forceps is to be desired since it will keep the surgeon's hands from being exposed to direct radiation.
5. Extend the closed forceps' tip deep into the wound under fluoroscopic control until the tip, as shown by greatest motion of foreign body, is in the plane of the foreign body. This probing is directed by the roentgenologist.
6. Then, and then only, open tip of forceps and grasp foreign body. Slowly move tip of forceps in order to prove that the foreign body has been grasped. This ends fluoroscopy.
7. Continue the remainder of the procedure in bright light.

It is impossible to describe verbally the ease of removal by this method compared to the "blind" approach used by most surgeons. Once used and appreciated, no other method will suffice.

Now as regards army localization of foreign bodies, I have been very impressed by the mathematical computations and the reduction of these computations to simple factors so that a foreign body's depth can now be determined in less than one minute. It may be an important point in determining whether a case must have wide exploration, as in intra-abdominal or intra-thoracic foreign bodies, something a good fluoroscopist may be able to tell without measurement. Many of the objections which were stated before, however, still apply, namely, that between determination and attempted removal, the foreign body may or will be moved so that even if the depth determination is reduced to ten seconds, I still fail to see its use except that it serves to indicate the presence of the foreign body and its location *only at the time of localization.*

SUMMARY

A simple method of removing a foreign body by combined fluoroscopy and surgical exploration is described. This method is based on the principles of the "nearest point method" described in the U. S. Army X-Ray Manual, second edition. The method involves the use of a small hand screen which can be placed in the field of operation without contaminating the field, as described by Arens.

The civilian as well as military applicability of the method is discussed.

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DISCUSSION

Dr. Warren Furey, Chicago: This presentation of Dr. Mesirow's is, as he puts it, most timely. He certainly adequately covered the subject in which we should all be intensely interested. Needless to say, we have all had some experience, probably varied experience with the many methods employed in the removal of foreign bodies, varying probably from the precision methods to the hit-and-miss methods that a goodly number of us may practice.

The thing that strikes me most about a method such as Dr. Mesirow has presented is that it gives us, in a simple way, a method that any of us can employ to advantage in our office or in our hospitals. The thing that most of us have difficulty with, I think, is that the foreign body patient is sent to the x-ray department, and without even consulting the radiologist a routine posteroanterior and lateral projection is made, and we determine at that time that a foreign body lies in such and such a spot. The patient then leaves radiology, and we see it no further until we catch the "devil" for faulty localization, when the surgeon comes back and does not find it in that spot.

We fail to take into consideration the fact that that film may have been made in one plane, and as the hand is turned in the opposite plane to make the removal, there is muscular contraction and the small foreign body will move with the muscular contraction on changes of position.

I really think that we should commend Dr. Mesirow highly for calling our attention the procedure that is not only a simple procedure, but one that we could all use to advantage.

Dr. F. Flinn, (Decatur): Using this method, I have never failed to remove or see but one foreign body which was not removed. That was a part of a needle which was used to administer a local anesthetic in extraction of an upper molar. The dentist immediately brought the patient in, and with the surgeon we started working. We never got that needle. I think we could touch it, but we could never grasp it, it certainly moved rapidly. In taking numerous films, you could see that it moved along until the point was resting against the base of the skull, but we failed to get it.

One other very difficult experience that I had, and I knock on wood, was about ten years ago when we placed some removable platinum implants of radium in the tongue. These were prepared for us, and at the time for removal we pulled on the strings, and all came out but one. That was, of course, the one deepest in the base of the tongue. Talking about traveling, this implant ran around in that tongue like a goldfish in a bowl, and we worked and worked and worked, but eventually with one final stab we caught it and brought it out. Upon examining that implant, we found that the eye, in the center, had a very rough sharp edge, and undoubtedly with the motion of the contractions of the tongue, the action had rubbed the thread on the sharp edge until it had been cut in two, because there was no traction put on it in the meantime.

These are two very unusual experiences that I had, but I wish to commend Dr. Mesirow on his paper and assure him that in our experience this method has been very successful.

Dr. Gentz Perry (Evanston, Illinois): I want to compliment Dr. Mesirow on his fine presentation. There is one point that might make it seem that the accurate location of foreign bodies is sometimes inaccurate by the ordinary angulation methods that were used in the first war. They are much the same in the present army instruments.

If a man is fluoroscoped shortly after injury, the muscular contractions may still persist to such an extent that even with some serious injury when that patient is anesthetized with a general anesthetic, the relaxation of the muscle, granting that it is in the leg or some portion where the muscles are thick or heavy, the relaxation of the muscle after an anesthetic may change the apparent depth of that foreign body below the skin surface as much as one and sometimes even two or more centimeters. Therefore, the state of the muscle contraction is an important factor in removing these foreign bodies, especially if they are located near some important artery or nerve trunk.

That is something, of course, which the operating team and the radiologist, must become accustomed to. Those who are entering active service without that previous experience might some times make a considerable degree of mistake; that is, in the actual operative procedure. Therefore, it is well, if possible, to fluoroscope the patient after the general anesthetic has been given where the foreign body is to be removed.

Dr. Harry Olin, (Chicago): I believe that the removal and detection of foreign bodies should go through a routine that I established some years ago. I think it is very necessary first to plate all these cases. I think the removal of a foreign body without fluoroscopy and without your team work is practically a waste of time, and it subjects the patient to a lot of unnecessary procedure.

No foreign body should be removed without plating and fluoroscopy; especially important is the radiology to the surgeon. I think you can save a lot of time. I will say that in my experience, even in the very capable hands of surgeons, very good dissectors, a foreign body may take anywhere from a minute to three hours. I have had that experience, especially in the palm or in the sole of the foot. Some looked very simple. I have seen the whole palm fascia laid open,

even with fluoroscopic guide, so exceptionally you may have a lot of difficulty. However, in the main I believe, as Dr. Mesirow has stated, it is a job that may last from one to five minutes or ten minutes to the most for the average case.

Dr. Glenn J. Greenwood, Chicago: "I wish to thank all of the discussants. Dr. Delph's comments and consul have been opportune. I anticipated Dr. Holinger might dwell upon some of his numerous contacts with this entity. Dr. Galloway, for a number of years, has emphasized the role posture plays in the resolution of lower respiratory tract suppuration.

Dr. John F. Delph, Chicago: It is difficult to add much to this paper, especially as far as anatomy is concerned, because Dr. Greenwood has been working on this for some two or three years in order to familiarize himself with the various spaces concerned in surgical lesions of the esophagus. I think the subject itself is very important, because anybody doing any endoscopic work is sure to run into one of those cases sooner or later.

In one of these cases I was passing the esophagoscope when the accident happened. We did not know it at the time. The patient was very cooperative and there was nothing but a little bleeding at the time, which is not unusual. She got off the table and was all right, but two days later she was back in the hospital with a fulminating type of mediastinitis. My experience in these cases have been of two types — a slowly smoldering type of inflammation where it would be very difficult to make a definite diagnosis; you feel there is some infection of the esophageal wall; the blood count and temperature are elevated; in other words, not an acute mediastinitis, although potential. In the other type I have seen cases in which the white count was 20,000 or more, the temperature higher, and the presence of marked dysphagia and toxemia, and the patient was unable to get any food down whatever.

I think from looking at the literature that nearly everybody agrees that surgery should be employed, where you are positive there is an infection in the esophageal space. There is some question about that when the case is borderline and I do not know the answer. I know this, however, that I have been a little conservative and relied on chemotherapy a great deal.

We had a patient with a foreign body present in the esophagus for five days. The blood count was above 25,000, the temperature 102 to 103 degrees. She was toxic. We gave massive doses of a sulfonamide and decided to wait, because the bone had been in for five or six days and we were afraid to remove it. After withdrawing everything by mouth for a week and using sulfanilamide, the temperature subsided and we took the bone out. We watched the blood count and temperature all the time and felt there had not been a perforation. The bone was so large and there was so much trauma that she developed a stricture. One month after removal I did an esophagoscopic examination because the x-ray showed obstruction. There was a mass of granulation tissue on the posterior wall.

I do not think we know all the answers to this problem. I think we agree if there is suppuration in these spaces they should be opened but if there is a question about it, reliance should be placed on the sulphon compounds.

Dr. H. L. Ford, Champaign: I think many cases of mediastinitis might be averted if due attention is given to the upper abscess, that is in the parapharyngeal space, with gravitation down into the deep tissues. The writer directed attention to the median raphe of tissue that separates the retropharyngeal space. A few years ago it was described by Weintraub. Babson makes a point of emphasizing an anomalous artery on the right side which is not infrequently injured in low external incisions for retropharyngeal abscess.

PRIMARY ATYPICAL PNEUMONIA; ETIOLOGY UNKNOWN

EVSAY PRILLA, M.D.

CHICAGO

Long before the pandemic of influenza of 1918, an acute febrile disease, a type of pneumonia, was prevalent among the military forces and was known under such names as "catarrhal fever" or "soldiers' pneumonia." No etiologic factor could be found and no specific therapy was effective. Complete recovery occurred in most cases.

Since Bowen[1], in 1935, first reported his observations on 89 cases of pneumonitis occurring among the U. S. troops stationed at Hawaii, numerous reports have appeared in the literature of a "new," acute, febrile disease, of unknown etiology, involving mainly the respiratory tract.

Although this disease is really of frequent occurrence, according to Goodrich and Bradford[2], the seeming increase of cases of this disease noted recently is probably due to the fact that it was not recognized as a distinct disease entity.

As more cases are studied and described it becomes evident that this clinical entity is a

Presented before the staff meeting of the Norwegian-American Hospital, Chicago.

pneumonic process which by its manifestations is distinguishable from other types of pneumonia.

This type of pneumonia differs from pneumococcal lobar pneumonia and the usual types of lobular pneumonias in its symptomatology, course and treatment and because no causative organism could be definitely identified or cultivated from human or laboratory animal material. However, it is now generally believed, that this particular type of pneumonia is caused by a virus.[3]

Different authors attached various names to what appears to be the same disease entity, e.g.: — "Interstitial Pneumonia," "Disseminated Focal Pneumonia," "Capillary Pneumonia," "Acute Diffuse Bronchiolitis," "Acute Pneumonitis," "Atypical Bronchopneumonia," "Benign Bronchopulmonary Inflammation," "Influenzal Pneumonia," "Virus Pneumonia," "Pneumonia Variety X," "Q-Fever," etc.[3]

In a recent "Official Statement" to the Surgeon-General of the Army prepared by the Director of the Commission on Pneumonia, Board for the Investigation and Control of Influenza and other Epidemic Diseases in the U. S. Army, it was suggested that, for purposes of classification, these cases be separated from other pneumonias and designated "Primary Atypical Pneumonia; Etiology Unknown,"[4] which is correctly descriptive of the condition under discussion.

The distribution of this disease is widespread, probably global.

The seasonable distribution is variable and sporadic cases apparently occur regardless of season.

Mostly young adults, from about 21 to 30 years of age, who previously were in good health are usually affected. Adams, Green, Evans and Beach[5] have reported on 74 cases of "Acute Primary Pneumonitis" in infants with the conclusion that the peak of infectivity of this disease is the fourth and fifth week of life and premature infants appear to be most susceptible hosts of the pneumotropic virus.

There is no recognized difference between the sexes as far as susceptibility or immunity is concerned.

The general concensus is that it is transmitted by contact but is not highly communicable.[6]

The incubation period is between 7 and 26 days, as estimated by various investigators.[7]

The mode of onset is disputed. Some[7] describe it as "gradual" and "insidious," while others[8] give it as "sudden" or "abrupt."

The subjective symptoms are usually cough, headache, and fever and no objective findings guide the attending physician to a correct diagnosis. It resembles an ordinary "La Grippe," especially if patient also complains of aches in the back and legs, only in this case the patient appears more sick and the symptoms become more aggravated as the disease progesses.

The headache is severe, frontal in location and becomes agonizing during coughing spells.

The cough is dry, hacking, non-productive, or very little sputum raised, which is neither rusty nor blood-tinged. Substernal pain as well as soreness and tenderness of the abdominal muscles frequently result from the cough. Even the throat may feel sore for the first few days due to the cough.

The fever is high, 102° to 105° F, persistent and *falls by lysis* after 6 to 24 days, depending on the severity of the disease.

The respiratory rate is near normal, dyspnea rarely occurs and pleuritic pain is not present.

The pulse is regular, of good quality and its rate is only slightly increased.

The relationship of the respiratory and pulse rates, which are low, to the temperature, which is high, is characteristic of this disease.

There is also anorexia, malaise, constipation, the tongue is coated and sweating is common.

A rash may appear during the first few days, varying from a few red spots on the abdomen to a definite scarlatinaform erruption extending over the chest, abdomen and back, lasting only a few hours with no desquamation to follow. Derrick[9] states that "the absence of a characteristic rash during the first week in "Q" fever, is of importance in distinguishing this disease from urban typhus."

Epistaxis may be one of the early symptoms.

Physical examination of the chest during the first few days is completely negative and only on the fourth or fifth day of illness a slight indication of dullness on percussion and a few fleeting rales over one of the lower lobes may appear.

The examination of the heart is likewise completely negative.

Urinalysis usually shows a transient albuminuria.

Leucopenia in the early stages of the disease, is characteristic, and is usually below 8000; later it may reach 12 to 18000 w.b.c. with a relative increase in the polymorphonuclear neutrophilic leucocytes.

The sputum examination from a bacteriological standpoint does not differ from that of a healthy individual.

Blood cultures are negative.

As the disease progresses, prostration is severe and cyanosis may be present. The whole picture hardly indicates the presence of a pneumonic process which is disclosed only on the 4th or 5th day of illness by a roentgenogram of the chest. The picture will show an irregular shadow of a patchy density, usually over one of the lower lobes; its borders are not sharply defined, but appear, as if spreading, infiltrating into the normal appearing tissue above. Even at this stage of the disease, when the x-ray plate already reveals actual pulmonic involvement, the physical findings on chest examination are still not informative of the pathology present, which proves the correctness of the statement of Smiley at el.[8] That this "new acute disease of the respiratory tract has as its cardinal feature specific lesions in the lungs inaudible to the stethoscope but definite in the roentgenogram of the chest."

The course of the disease may be mild, as is true in most cases, moderately severe, or severe.[10] The difference is mostly of degree and not of kind. In mild cases the onset is more gradual, while in the severe it is more acute with all symptoms more pronounced. In mild cases the disease lasts from 6 to 9 days, in the more severe 14 to 24 days with gradual defervescence. The improvement in symptoms occurs gradually as the temperature falls by lysis.

The recovery is gradual and prolonged.

Complications rarely occur, except in severe cases in which Otitis Media, Acute Sinusitis, Mastoiditis and Empyema may develop, due to secondary invaders.

Fatal terminations have been reported[10] but they are rare in adults. In children and young adolescents, on the other hand, the death rate had been reported as high as 20% and in premature infants as high as 82%.[11 12]

The etiologic factor remaining unknown the diagnosis is uncertain and the differentiation is made by exclusion.

The following diseases must be considered in the differential dagnosis: 1. Influenza A and B — onset sudden, presence of coryza, sore throat and repeated chills; relationship of respiratory and pulse rates to temperature is in proper proportion. 2. Psittacosis Pneumonia — absence of history of exposure to birds (parrots); compliment fixation test for Psittacosis — negative. 3. Typhoid and Paratyphoid fever — absence of diarrhea; negative specific tests. 4. Pulmonary Tuberculosis — negative sputum test for TB bacilli. 5. Pneumococcal Pneumonia — negative sputum test for virulent pneumococci; sudden onset; rusty sputum; pleural pain; rapid pulse and respiration; positive chest findings on physical examination; definite x-ray findings; response to specific and chemotherapy; termination by crisis. 6. Bronchopneumonia. 7. Undulent Fever. 8. Meningopneumonitis. 9. Ricketsias. 10. Pulmonary Infarction.

The treatment of atypical pneumonia is purely symptomatic and supportive, since no specific measures are known and the sulfa drugs have absolutely no effect on the course or progress of this disease, which is another distinguishing feature of this condition. Sulfa drugs are given to these patients on the supposition that it may prevent complications due to secondary invaders. The fluid intake is maintained at 3 to 4000 c.c. per day. Opiates, particularly Codeine Sulfate in ½ gr. doses, are of value for cough and headache. Expectorants are not of great value at the beginning, but may be helpful when sputum begins to appear more freely. Steam inhalation, with or without, tinct. Benzoin Co. is helpful.

Oxygen therapy, tent or per nasal catheter, is indicated when marked cyanosis or dyspnea occurs.

The diet may be unrestricted.

Isolation of patient is recommended.

Complications are treated as they arise.

During the long period of convalescence tonics and vitamins may be helpful in restoring normal health and well being.

The following case history is illustrative of the description of the disease given above: —

March 3, 1942, I saw a white, male college student, 20 years of age, who was complaining of a severe, frontal headache; hacking, non-productive cough and occasional chill and sweat. The young man had not felt well for the last three days. Physical examination was negative. Temperature by mouth was 104°F. Respiration rate — 20 per min. Pulse rate — 78 per min. The next evening, a scarlatinaform rash appeared over the abdomen and back, disappearing completely towards morning, lasting only about 8 to 10 hours. On March 5th the patient was transferred to the Norwegian-American Hospital. The headache persisted; the cough was worse and the temperature stayed over 104°F by mouth. There was no pain on inspiration; no rusty or bloody sputum and no herpes labialis. On this 5th day of illness, there seemed to be a slight dullness over the left lower lobe posteriorly and a few rales could be heard over the same area, but there seemed to be no impairment of breath sounds. Examination of the heart was negative. BP — 110/70. A roentgenogram on the same day revealed a shadow over the left lower lobe, variable in density and not sharply defined at its upper border, but seemed gradually tapering off into the normal tissue above. The roentgenologists's report was: — "Roentgenological findings show a consolidation of the left lower lobe which apparently is due to a pneumonic process."

Examination of the nose, throat, ears and sinuses proved negative.

Laboratory tests gave the following data: —

Urine — showed 1+albumine and no casts.

Blood — 3500000 r.b.c.; Hgb.—18 Gm.; WBC—8300 (segmented Neutrophils — 35%, Lymphocytes — 35%)

Blood smear — negative for pneumococci and malaria.

Sputum — no pathologic pneumococci, or strep and no TB — bacilli. Mouse inoculations proved negative for TB — bacilli.

Tests for Typhoid, Paratyphoid A and B, B.Abortus and B. Melitensis — all proved negative.

The temperature reached its peak on the 7th day of illness reaching 105 F. by mouth and then receded gradually until it reached normal on the 15th day of illness. The highest pulse rate was 112, also on the 7th day of illness, while the highest respiration rate of 52 per min. was reached on the 8th day, with some cyanosis at the same time. Pulse and respiration rates became normal on the 16th and 18th day of illness, respectively.

The treatment consisted of sulfapyridine at first and later sulfathiazole and supfadiazine. These had no apparent effect on the symptoms or course of the disease.

No complications developed and convalescence was uneventful with complete recovery.

SUMMARY

A disease of the upper respiratory tract, involving primarily the pulmonary tissue is described. The etiologic factor of this disease is not definitely ascertained as yet, but generally believed to be a virus.

The main clinical features of this disease are: — more or less insidious onset, headache, dry cough, high temperature, which falls by lysis, pulse and respiratory rates — low, out of proportion to the prevailing high fever; slight, if any, change in leucocyte count; bacteriologic examination of sputum and blood are negative for pathogenic bacteria; physical findings are of no significance and only a roentgenogram reveals a pulmonic involvement; the sulfa drugs are completely ineffective; complications are rare and recovery is complete.

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Those drugs, including the opiates, physostigmine, prostigmine methylsulfate and the choline derivatives, which stimulate motility of the small bowel inhibit the colon. Solution of posterior pituitary and pitressin produce powerful contractions of the colon but diminish motility of the small bowel. Postoperative distention may be due to the paralyzing action of morphine on the colon.—C. B. Puestow, Chicago, in *Jl. A. M. A.*, Nov. 21st.

HEMORRHAGE FROM THE INFERIOR EPIGASTRIC ARTERY

Report of a Post-Operative Case

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Hemorrhage from the inferior epigastric artery is not rare. Many surgeons, in personal conversations, report having had contact with such cases. The literature is replete with reports of spontaneous hemorrhage, but those due to trauma and those occurring post-operatively are scarce.

The chief interest in the subject lies in the difficulty in making an exact diagnosis, and in eliminating intra-abdominal diseases and diseases other than hemorrhage of the abdominal wall. Once an exact diagnosis is made the surgeon may with confidence make use of the various methods to control hemorrhage, such as pressure, application of a tourniquet (obviously inapplicable here), and direct ligation.

Hemorrhage from the inferior epigastric artery may be spontaneous, traumatic, or post-operative.

Spontaneous hemorrhage was reviewed from 1809 to 1880 by Maydl[1]; those occurring prior to 1923 by Wohlgemuth[2]; and those from 1919 to 1938 by Payne[3]. Coleman and Bennett[4] gave an excellent resume of the subject in this journal in 1941. Payne reported three cases of spontaneous rupture of the superior and inferior epigastric arteries; one of a male, 55, who suffered a mildly severe pain in the left side of the abdomen while a passenger in an automobile; a mass, soon developing in the region of the left rectus, was the size of a grape-fruit. The clot was evacuated and the bleeding vessels ligated. The second patient was a 64 year old male who had had a gradually increasing pain in the left lower abdomen for a week, with no causative trauma. On examination, the left recutus region stood out like a bologna sausage from the ensiform to the symphysis pubis. After about 5 days' observation, the clot was evacuated and a bleeding vein ligated. The third patient was a 46 year old female who for one week had a steadily increasing pain and mass in her lower left abdomen. The mass was the size of an orange, lay within the region of the rectus sheath between the umbilicus and pubis, and

showed a purplish discoloration just below the umbilicus. The clot was evacuated as in the previous two patients. All patients were relieved and recovered. These reports are typical of the many cases of spontaneous hemorrhage which have been reported.

As to *traumatic hemorrhage,* Moreno[5] described one case of fatal internal hemorrhage due to a wound of the epigastric artery caused by a simple penetrating wound of the abdomen. Malice[6] reported two cases of stab wounds of the abdomen producing hemorrhage from the inferior epigastric artery. Other cases are reported in which various forms of external trauma have been the causative factors.

A study of the literature for the past seven years revealed only one case of *post-operative hemorrhage* from the inferior epigastric artery. Gallander[7] states "the inferior epigastric artery may be injured in a low rectus incision, either in splitting muscle fibers or in retracting them." Decoulx, Driessens and Demarez[8], in 1939, described a case of spontaneous hematoma following four successive laparotomies, the most recent operation occurring in 1931. With an 8 year interval, this hemorrhage should not be classed as post-operative, yet, since the authors state that the etiology of the muscular lesion (leading to hemorrhage) was unquestionably the multiple irritative actions of the repeated laparotomies, aggravated by the coughing of bronchitis, it has been included.

While it is conceded that the diagnosis of post-operative hemorrhage is often made easily because the field has recently been invaded, yet, frequently, just as much confusion as to diagnosis exists as with spontaneous hemorrhage. Those occurring in the early post-operative period are fairly frequent, easily recognized, and easily controlled; and, consequently, are of little interest. The late or secondary hemorrhage, occurring after healing is complete, or nearly so, is the type which may be difficult to diagnose. It is such a case that is being reported here.

REPORT OF CASE

Mrs. M. P., a patient of Dr. David R. Scott, a well developed, well nourished multipara, 31 years of age, entered the Norwegian-American Hospital on June 10, 1942, for the relief of a persistent right lower abdominal pain. On June 11, 1942, through a right paramedian incision, her appendix was removed and both ovaries were partially resected for massive follicular cysts. A branch of the inferior epigastric artery entering the posterior surface of the right rectus abdominis muscle was ligated on entering the abdomen. During closure, the same artery was again found to be bleeding. It was carefully isolated and ligated with a transfixion ligature of plain O catgut. The operation was completed with all bleeding controlled. After an uneventful convalescence, the patient went home on the eleventh post-operative day.

On June 25, 1942, 14 days postoperative, the patient was wakened at 2 a.m. from a sound sleep with a pain in the abdomen in the region of the healed incision. She was readmitted to the hospital later that same day. The pain had persisted all day, had become very severe, was constant in character, and had spread upward to the lower thoracic or diaphragmatic region and downward to the lower abdomen and pelvis. Her respirations were short, shallow and jerky because of the upper abdominal pain. Her conjunctivae were pale, the pupils were dilated, there were dark rings under her eyes. The lips, skin and nails were pale. There was mild perspiration which was not clammy. The extremities were cold. There was air hunger and thirst. The temperature was 97.4 F., pulse 110, respiration 26, blood pressure 96/60.

There was a lobulated, fairly firm, tender and painful mass, 3 inches wide by 5 inches long, under the well healed right rectus incision; in this region the abdominal wall was rigid and elevated noticeably above the remainder of the abdomen. When the head or leg was raised the tense anterior rectus fascia could be felt overlying the mass. Elsewhere, the abdomen was soft and flaccid, with normal peristaltic sounds, and no shifting dullness in the flanks. A vaginal examination revealed tenderness and a boggy indefinite mass or "sense of resistance" all over; in the cul-de-sac, both lateral fornices, and anteriorly around the bladder.

The urine examination was essentially negative. The blood count showed 3,190,000 red corpuscles as compared to 5,050,000 two weeks previously; hemoglobin 12.5 grams (69 Sahli units) as compared to a previous 17 grams (94 Sahli units); and 18,000 white corpuscles as compared to a previous 9,050.

The diagnosis was secondary hemorrhage from a branch of the inferior epigastric artery, which had been twice ligated just two weeks previously. The upper abdominal and pelvic symptoms were accounted for by a migrating dissection of the posterior rectus sheath and peritoneum upward to the diaphragm and downward to the loose areolar extraperitoneal tissues of the pelvis. Since there were no intra-abdominal findings the hematoma was considered to be in a relatively closed space.

The treatment, therefore, consisted in a very tight abdominal scultetus binder, oxygen by mask for the anoxemia and to induce diaphragmatic rest, blood transfusions for replacement, and opiates for sedation.

Careful and frequent observation followed to determine whether or not surgical intervention and direct ligation were required.

The course was stormy. The patient was given an immediate transfusion of 600 cc. of citrated blood with considerable improvement. On the second day, however, during the course of the second transfusion, the patient developed a generalized urticaria, temperature of 102.2 F., pulse of 120 and severe headache. The donor had eaten a huge meal just before donating his blood in order to fortify himself for the ordeal. The recipient experienced a violent allergic reaction to his ingested food which quickly subsided with adrenaline. On the third day, while the nurse was re-adjusting the binder, the patient had a sudden fit of severe coughing which continued for several hours. Examination revealed all the physical signs of a right lower lobar pneumonia. The temperature, pulse, and respiration all remained relatively normal, however, nor were there any signs of toxemia or of shock. Sputum and mouse inoculations were negative for pneumococcus. The chest x-ray revealed irregular areas of increased density at the cardiophrenic and costophrenic angles. A diagnosis of pulmonary embolism was made.

The abnormal lung findings disappeared in four days. The blood count returned to normal in five days. The patient was allowed up on the eighth day and was discharged on the fifteenth day with a normal abdomen to physical examination. She complained of distress and dull pain when her bladder was overfilled. This disappeared at home on about the twenty-third day, since which time she has remained well.

COMMENT

The recognition of hemorrhage from the inferior epigastric artery depends upon, first, signs of concealed hemorrhage, if present. With the smaller hematomas, e.g., one the size of an orange, no signs of concealed hemorrhage may be discernable. As the hematoma increases in size, the signs of hemorrhage become more and more apparent.

Second, a mass is always present, is painful and tender, is underneath the anterior rectus fascia, is limited laterally by the lateral borders of the rectus, superiorly by the costal margin, and, inferiorly, it may go so far as to fill the extraperitoneal pelvic spaces. Beyond the region of the involved rectus sheath, the abdominal wall is normal.

Third, signs of intra-abdominal disturbance, such as shifting dullness in the flanks, altered peristaltic sounds, a mass shifting under the abdominal wall, altered percussion note, or significant changes in gastro-intestinal physiology, are absent.

The treatment consists in, first, replacement of the blood loss; second, efforts to control the bleeding by pressure with a tight abdominal binder while preparing the patient for surgery (Lichtenstein[9] states that the last 5 or 6 cases treated at Cook County Hospital with tight binding recovered without ligation); and, third, surgical evacuation of the clot and direct ligation of the bleeding vessel only if the above procedures fail to control the bleeding, and the clot fails to absorb. Tight abdominal binding, it is pointed out, may be sufficient to control bleeding and make surgical ligation unnecessary.

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NAIL LACQUER DERMATITIS

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The great number of reports on the clinical application of the sulfonamides has been complemented by a rich literature on the toxic visceral and the cutaneous manifestations[1] of the clinical applications of these drugs. These latter reports have raised the "index of suspicion" of the alert practitioner for evidence of systemic toxemia and for the readily seen toxic dermatoses[2] due to drugs, including the sulfonamides,[1] with the result that many practitioners now proceed on the premise that any toxic cutaneous reaction developing in a patient receiving one of the sulfonamides is due to the particular drug in this group that is being given, unless proved otherwise by consultation or the disappearance of the cutaneous toxic reaction when the drug is

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stopped and fluids pushed. The knowledge of dermatitis due to external irritants[3] has been enriched by many reports and investigations during the past decade in industry;[4] and in cosmetic irritants,[5] and more recently attention has been called to an external irritant dermatitis due to nail lacquer.[7, 8]

In the case here reported a white female, aged 24, was admitted to the orthopedic service of the Michael Reese Hospital for a supracondylar osteotomy of the femur to correct a bowing due to ricketts in childhood. The fragments were held in place by Steinman nails and postoperative drainage developed around the nails. Sulfathiazole was given to the patient in small daily doses, and she promptly developed nausea[6] after taking the sufathiazole, and within a few days after its administration there developed an erythematoscaling dermatitis of both eye lids with associated edema of the lids (Figure 1).

Figure 1 — Edema and dermatitis of the eye lids. The involved areas were the site of a superficial, erythematous scaling dermatitis.

Since the patient was on Sulfathiazole, and had developed nausea[6] following its administration, it was felt that the eruption on the eye lids might also be related to Sulfathiazole, and dermatologic consultation was requested. When first seen by me the presence of a dermatitis of limited character involving the orbital areas with the complete absence of a generalized profuse eruption possessing the usual morphological characteristics of a toxic dermatosis of endogenous origin[2] reduced "the index of suspicion" for a drug eruption, and raised the presumption that the present eruption, limited to the eye lids, was most probably of external origin. When the patient was questioned about her very lustrous finger nails, she admitted that she had polished her finger nails, and had used a popular brand nail lacquer[7, 8] just previous to the development "that liquid nail polish is simply a lacquer which contains celluloid or Duco in a solution of acetone or amyl acetate, together with castor oil, of the eruption on her eye lids, Tulipan[5] states alcohol, ether and dyes". Weber[3] lists all the substances mentioned by Tulipan, except ether, as cutaneous irritants, and the nail polish used by the patient contained the irritants listed by Weber[3]. The edema of the eye lids, the redness and scaling promptly subsided when the use of the nail polish was stopped, and the patient left the hospital with complete subsidence of the eruption within a week.

COMMENT

With the increasing use of the sulfonamides in medicine, and the increasing reports of varied toxic reactions from their use, it is important that the physician be on the alert for all types of toxic reactions, and be able to differentiate the cutaneous reactions occuring in a patient *taking one of the sulfonamides; from those re*actions due to other causes; or from any of the toxigenic drugs[2]. The increasing number of reports on dermatitis due to external irritants[3] have served to establish a definite morphological concept for these conditions so that differentiation should not be difficult with proper consultation. The case here reported is an illustration of this theme.

Note: Since seeing the above patient, I have seen a girl in my private practice, employed as a secretary, who presented an acute erythematocrusted and weeping dermatitis of the dorsum of the hands and fingers, that had been present at intervals for the past two years. Her nails were highly polished, and when questioned about the possible relationship of this acute dermatitis, and her "nail care", she admitted

that this was a possibility, and further questioning revealed that the eruption on the hands usually seemed worse following the use of liquid nail polish. She had been using a popular brand of nail polish of the same type as used by the patient reported above, and on withdrawal of all nail polish and lacquer from her nail care together with appropriate local treatment, there was a prompt involution in the dermatitis.

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RUPTURED INTERVERTEBRAL DISK

The term "lumbago" is rapidly falling into disuse as a nondescript designation for ill-defined pains in the lower spinal region. Unknown as an entity but twelve years ago, ruptured intervertebral discs are recognized today as the cause of a remarkably high percentage of hitherto intractable and incurable low back pains and sciaticas. Neurosurgeons have now precisely defined the symptomatology and pathology, and perfected an operative technic that not only relieves but cures virtually all back disorders in this category.[1,2]

The symptoms are low back pain in recurring attacks, some very severe and disabling, the pain radiating down the posterior aspect of the legs. An interesting as well as a diagnostic feature is the intensification of the pain on sneezing, coughing, and straining of the abdominal musculature. The spine is stiff, relatively immobile, for movements aggravate the pain. Lasègue's sign is usually positive. Neurologic manifestations must be carefully sought, as the Achilles reflex, and occasionally the knee jerk, may be diminished or even absent. Sensory disturbances are not uncommon, consisting of hypoesthesias of a segmental distribution, and paraesthesias. Previously, contrast media were used to localize and demonstrate the lesion radiologically, but this procedure is now deprecated, for extensive investigations have demonstrated that 96 per cent of these cases are situated in the region of the fourth and fifth lumbar vertebrae.[3] This significant finding obviates the necessity for contrast x-ray studies, with the attending disadvantages. Needless to say, pelvic, rectal, and neighboring osseous pathology must be excluded before a diagnosis of ruptured intervertebral disks can be safely made.

The operative technic has been simplified so that the original bilateral laminectomy has been replaced by a method in which the neural arch is either preserved or untouched, with rare exceptions. After adequate exposure, the necrotic intervertebral disks, the result of trauma and not of infection, are curetted. In about 25 per cent of the cases the necrotic intervertebral disk does not protrude and hence is not easily visible, but is concealed and must be searched for and emptied.[4] Not all of the pathologic disk need be gouged out, but free egress for its ultimate protrusion should be provided, as in the adequate opening and drainage of an abscess. After the operation, a brace should be worn for three months. Recurrences are unusual after operation, so that once a cure is attained it may be regarded as final.

A crippling and disabling ailment is now amenable to surgical therapy. For those who habitually suffer from agonizing back pain with sciatic symptoms an avenue of cure is now opened. As in all disorders that cause disability and painful inefficiency, the cure of ruptured intervertebral disks will not only make many persons happy but will also make them more useful.—*New York State J. M.*, 42:2197-2198, *Dec.* 1, 1942.

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Industrial Health

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EPIDEMIC KERATOCONJUNCTIVITIS

Since this ailment is appearing in this state, prevention of its spread is important in order to minimize incapacity and absenteeism. The following is copied from Circular Letter, Number 14, Office of the Surgeon General:

"The initial symptoms are those of acute follicular conjunctivitis. In many cases the onset is sudden and severe. The conjunctivitis is characterized by "sandy feeling," as if a foreign body were present. Examination of the eye at this time discloses an extremely congested and chemotic conjunctiva, rather glassy in appearance, with sometimes concomitant edema of one or both lids, particularly the upper. Petechial or larger conjunctival hemorrhage may occur. The conjunctivitis persists about two weeks. There is no discharge, although a transient pseudomembrane may appear on the palpebral conjunctivas and caruncle. Systemic symptoms composed of headache and malaise occur shortly after the onset of the conjunctivitis in from 25 to 50 per cent of the cases. The headache, a moderately severe, dull, aching pain over the frontal or occipital region, lasts two to three days and is apparently unrelieved by analgesics in most cases. It frequently prevents sleep and is often described as a "night pain". The malaise, when it occurs, varies in intensity with the severity of the conjunctivitis in most instances and is described as "not feeling well" or as having an "achy feeling". A preauricular adenitis appears in about 75 per cent of the cases thirty-six to forty-eight hours after the onset of the conjunctivitis. The nodes usually measure 1 to 2 cm. in diameter, are tender and may remain enlarged from one week to several months. A keratitis appears about one week following the first symptoms of conjunctivitis. This is characterized by sudden pain, photophobia, lacrimation and blepharospasm. Close inspection of the eye at this time reveals several dotlike opacities in the cornea. These gradually become larger and coalesce to form small round opacities from 0.5 to 1.5 mm. in diameter. The symptoms due to the onset of the keratitis usually last about one week but in some cases persist for two to six weeks. With the appearance of the keratitis the visual acuity is definitely diminished. Patients sometimes complain of seeing halos around objects. Precision work at this time is almost always impossible. A 20/30 vision is usually regained in some three to six weeks and the ultimate prognosis as to vision is good. The disease is self limited, usually lasting from one to three months but sometimes much longer. The corneal opacities do not ulcerate, gradually diminish in size, and in most instances finally disappear. In some severe cases, however, damage to the cornea causes a permanent impairment of vision.

"The early recognition and prevention of spread of this disease is particularly important because of its high noneffective rate. Precautionary measures which should be carried out consist in: (1) Isolation of the patient during the acute stage of the disease, if practicable. Patients should have no access to towels, soap or washstands used by others. Where a small number of cases occurs, strict isolation is desir-

able. (2) Careful supervision of patients with irritated eyes, chalazions and traumatic lesions of the eyes which render them more susceptible to keratoconjunctivitis. (3) Advice to the patients that this disease may be transmitted by hands, towels, handkerchiefs and other fomites that have been in contact with the infected eye. (4) Thorough washing of the hands after examination of a suspected patient and before examination of other patients. (5) Sterilization of solutions, eye droppers and instruments used in eye cases. It is particularly important for the responsible medical officer to see that the fourth and fifth precautionary measures just mentioned are observed, since the dispensary can become the focus for the distribution of keratoconjunctivitis to patients who otherwise would not be exposed."

These cases should be reported to the local and state Health Departments.

Frederick W. Slobe, M.D., Chairman

PASS THE AMMUNITION

We are reminded every so often that where there is no vision the people perish. Our vision has occasionally become very dim even if it has never entirely faded, and this has usually occurred when the present has seemed most fruitful and the future most promising. It is only when we are combating adversity that we realize the sweetness of its uses, and then, for a time, the veil is lifted from our eyes.

A year ago at Christmas time we had embarked on a common enterprise, each of us sharing the hopes of victory and risking the dangers of defeat. We were confused and uncertain then, fearful of our weaknesses and ignorant of our strength. We knew what we had been spared many of the miseries of other peoples, but we did not know how long we might be spared them, or what else the future might contain. We knew only that a year of giving ground was in store for us — a year of sparring for time before we had strength to strike back.

Some of our weaknesses have been uncovered, and we know now that we have strength and courage and initiative in spite of the soft years that are behind us. We have put a girdle around the earth, if not, like Puck, in forty minutes; our youths are standing to their arms by Greenland's icy mountains and on Africa's golden sands. They are, to borrow further from the same literary source, basing their activities on the coral strands of India; and the heathen who, in his blindness has bowed down to wood and stone, bows also before the fire of our guns of destiny.

We have celebrated the great pageant of Christianity, but it was as militant Christians that we observed it. As we go forth to war, the Son of God goes with us. This year we will praise the Lord, as usual, but we will also pass the ammunition.—*New England J. Med.*, 227: 1005, *Dec.* 24, 1942.

SULFAGUANIDINE AS A CHEMOTHERAPEUTIC AGENT IN INTESTINAL INFECTIONS

(E. K. Marshall, Jr., Baltimore, in *Miss. Doc.*, June 20th)

A number of controlled studies on the use of sulfaguanidine in bacillary dysentery have appeared during the past year. Cases of dysentery due to Flexner, Shiga, Schmitz and Sonne type have responded favorably, the clinical course being considerably shortened. Data obtained on Shiga cases:

1. Feeling of well-being within 24-48 hours, rapid relief of abdominal pain and tenesmus.
2. Temperature and pulse in uncomplicated cases often normal within 1-3 days.
3. A remarkable reduction in the number of stools.
4. Rapid disappearance of blood from the feces; mucus also decreases, but takes longer to disappear.

Of 281 children receiving sulfathiazole, 9 per cent developed toxic reactions beyond nausea and vomiting. Sulfaguanidine toxic reactions are nil or negligible. Only cases which do not respond to this drug require a much more toxic and a more efficient chemotherapeutic agent.

Schedule: Initial dose, 0.05 Gm. per Kg.; maintenance dose of 0.05 Gm. per Kg. every 4 hours until number of stools is reduced to 5 or less, then 0.05 Gm. per Kg. every 8 hours, for at least 3 days. In adults, weight can be disregarded and a dose of 3.5-4.0 Gm. given.

Clinicopathologic Conferences

J. J. Moore, M.D., Department Editor.

PRESENTATION OF CASES BY
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PULMONARY EMBOLISM

Mrs. F. F.—This patient, 60 years of age, was admitted to the hospital complaining of vaginal bleeding for two weeks. She had passed her menopause about 8 years previously and since that time had no vaginal bleeding or discharge of any kind. Three weeks before entrance to the hospital she began "spotting" and since that time the flow of blood increased until she had to use two napkins per day. The bleeding was not accompanied by pain or discomfort.

In the past history the following important features were disclosed. The patient had had two children, one of whom was delivered by forceps. There was no history of carcinoma in the family. On physical examination the blood pressure was found to be 210/140. The lungs expanded equally and the heart borders were within normal limits. There was a systolic murmer at the apex which was transmitted to the base.

The next day 125 mg. of radium were inserted into the uterus and allowed to remain there for 24 hours. A week later the abdomen was opened and the uterus was found to be irregularly enlarged from fibrous masses in its wall. The ovaries were small and atrophic. A panhysterectomy was performed. The urine of this patient had a specific gravity of 1.010 at one examination and 1.025 at a second examination. Each time red blood cells were found and many white cells. The blood count was 4,390,000 red cells per cubic mm. and 9,950 white cells per cubic mm. In the differential count there were 25% lymphocytes, 3% mononuclear cells, 70% neutrophiles and 2% eosinophiles. The hemoglobin was 80%.

The pathological examination of the tissues removed at operation resulted in the diagnosis of fibromyomas of the uterus and benign endometrial polyps. This patient had no fever until her second post-operative day and then became afebrile on the fourth day. On the eighth post-operative day the patient became restless but had no definite complaints. On the tenth post-operative day the patient became cyanotic at about 12:20 P.M. Her skin became cold and clammy and her respirations were shallow and labored. One ampule of coramine was given and one of caffine sodio-benzoate. Oxygen inhalations were started within 5 minutes. At 12:49 P. M. respiration ceased. The autopsy disclosed the following:

Autopsy Report — This is the body of a white woman about 60 years old, weighing about 170 lbs. and 5 feet and 6 inches tall. The scalp hair is dark brown only faintly streaked with gray, the eyes are gray. There are dentures for all of the teeth in both upper and lower jaws. The neck is plump and near its base contains a scar of an old thyroidectomy. The breasts are plump and the abdomen is moderately obese. There is a midline laparotomy wound now closed with black silk sutures. The edges of the wound are in excellent apposition and partially healed.

The fat of the front vertical midline incision is 6 cm. thick distal to the navel. There is a

sinus tract in the subcutaneous fat approaching within 4 mm. of the skin of the distal third of the laparotomy wound. This tract leads downward to the fundus of the urinary bladder and along the back surface of this organ to a cavity 5 cm. across and 1.5 high. The cavity is roofed over by the sigmoid part of the colon which is bound to it by fibrinous adhesions. Most of the top of the cavity is formed by peritoneal layers held in place by catgut sutures. The base of the cavity is formed by the anterior wall of the rectum in back and by the posterior wall of the bladder in front. There is a sinus opening from the urinary bladder 8 mm. across and 1 high into the cavity described and through the blood clot, in this it connects with the anterior wall of the rectum. In the latter structure there is again a transverse sinus opening resembling that of the bladder and on the rectal end of the tract is a small tag of catgut. There is a localized pelvic peritonitis on the left side and this is limited to a region about 7 cm. square by the coils of small bowel and the meso-sigmoid. The uterus is missing as are the fallopian tubes and ovaries.

The cecum is distended with gas and 12 cm. in diameter. The coils of small bowel contain an abundance of bile stained chyme. On the left side of the pelvis close to the cavity, before described, there are several knots of dilated veins. In one of these is a firm organized clot with a diameter of 3 mm. There are soft propagated thrombi on each end of this clot which is 2.8 cm. long firmly attached to the wall and which extends into a collateral.

The stomach contains about 300 cc. of sour curdled material resembling milk. There is no change of the lining of the gall bladder or of the common, cystic or hepatic bile ducts. The pancreas has a heavy peripheral infiltration of fat. The lining of the portal vein and hepatic artery is unaltered. The spleen is flabby, weighs 200 grams and has a soft purple parenchyma. The supra-renal glands have thick cortexes which are well provided with bright yellow lipoid. The medullas are pale, gray and firm. The kidneys are of normal size and each weighs 175 grams. The right kidney contains about 12 cysts, these project above the cortex and the largest is near the upper pole 12 mm. in diameter and filled with gray yellow liquid. The left kidney is fluctuant and its pelvis is dilated to twice normal size. The calyces are distended with thin pus and the linings are speckled with hemorrhages. The left ureter is dilated to 3 cm. in diameter at its junction with the pelvis. The lining of the urinary bladder is dull red purple and contains two encrusted zones each 5 mm. in diameter and containing dull yellow gray elevations of pus and fibrin. There is a similar collection of material surrounding the sinus tract.

The diaphragm can be pushed to the middle of the fourth interspace on each side. Both lungs are crepitant and feathery except a region 6 cm. in diameter and extending 2 cm. into the right middle lobe on the costal surface. The center of this firm region is dull red and contains emboli of firm clot in the arteries of the fourth order. The clots completely close the lumen of two arterial branches. In the main pulmonary artery and extending into its two main branches is a tangle of blood clot with a diameter of 3 to 5 mm. The spaces between portions of this clot are filled with soft red blood. The combination of embolic clot and fresh clot is sufficient to entirely close the lumen of both main branches. Portions of clot 3 to 5 mm. in diameter and up to 12 mm. long are scattered at intervals about 6 in all throughout the branches of the second and third order of the pulmonary artery to each lung. These small clots are free in the lumen and are of insufficient caliber to occlude it. Each lung weighs about 450 grams.

There are only about 20 cc. of gray yellow liquid in each pleural cavity. The fat of the mediastinum is up to 4 cm. thick and there is no vestige of thymic body.

The heart weighs about 380 grams. On the middle of the front of the right ventricle is a firm fibrous patch 2 cm. in diameter. The circumference of the pulmonic ring is 8 cm. and just distal to the cusps the clot already noted in the pulmonary artery begins. At the circumference the aortic valve ring is 7.2 cm. The cusps of the aortic ring are thickened at their bases. The root of the aorta is changed about 20% by fat, this occurs in irregular patches 2 to 5 mm. in diameter. In the abdominal part the aorta is changed about 40% by fat. On surfaces made by cutting the myocardium is dull brown but containing occasional snow-white

flecks 1 to 6 mm. in diameter. Only about 10% of the lining of the coronary artery is changed by fat.

The lining of the inferior vena-cava is smooth and pale blue gray. The openings of the hepatic veins are unchanged.

Anatomic Diagnosis:

1. Recent pan-hysterectomy.
2. Fistulous communication between the rectum and urinary bladder.
3. Purulent urinary cystitis.
4. Ascending left uretero-pyelonephritis.
5. Organized thrombi in the left pelvic peritoneum.
6. Localized pelvic peritonitis.
7. Pulmonary embolism. (slight with infarction; extensive and fatal).
8. Moderate generalized senile arterio-sclerosis.
9. Chronic interstitial myocarditis.
10. Old thyroidectomy.
11. Obesity.

Histology: In the frozen sections stained with H & E the heart muscle contains an increase of fibrous tissue near the branches of the pulmonary arteries. In general the muscle fibers are quite regular and the striations are distinct. There are moderate accumulations of brown pigment at the poles of the nuclei. The renal glomeruli are well preserved and most of them entirely fill the Bowman's capsules. The capillaries near the junction of cortex and medulla are dilated and in a few places are surrounded by hemorrhages. In other sections of kidney the tubules are swollen and a few of them contain albuminous casts. In these sections also there are occasional hyalinized glomeruli. In the pancreas there are extensive fatty ingrowths near the periphery. These extend especially along the septa between the lobules. In the spleen the Malpighian bodies are large and clearly separated from one another by dilated blood filled sinusoids. A portion of uterus contains a typical fibromyoma, parts of this have undergone degeneration and contain homogeneous blue staining regions. A section through a blood clot contains imperfect laminations of white cells and a little fibrin which alternate with broad fibrin bands to which are attached fresh red clots. A part of the fistulous tract is composed of granulation tissue, runs through fat and other portions are in the muscle. There are heavy accumulations of lymphocytes in a few places and admixture of polymorphonuclear leukocytes suggesting abscess formation. The supra-renal glands contain the usual amount of pigment near the junction of cortex and medulla. The layers of the cortex are clearly defined. The liver lobules are distinct and the cells in the central fourth are heavily pigmented with hemosiderin. There is only a slight increase in the lymphocytes in the portal region. A second portion of clot thickened from the inferior vena-cava resembles the piece found in the pulmonary arteries and previously described. The lung contains two types of change about one-fourth is atelectatic, another 20% has alevoli of normal size and the rest are dilated.

Case 2 Mrs. M. K. — This patient 56 years of age came into the hospital complaining of cough, vomiting and pain in the right side. A week before entrance she started to cough and her head felt congested. At the same time she had a severe pain on the right side radiating to the back and down to the lower abdomen. In the interval between the onset of these symptoms and her entrance to the hospital she vomited several times each day. Her past history included three normal pregnancies and one miscarriage but in other respects was negative. On physical examination she was well developed but weak and apparently ill. Her blood pressure was 180/110 and her heart rate was 84 per minute.

The essential change was noted in her abdomen which was tender on the right side just below the costal margin and extending downward and toward the midline. There was slight rigidity of the upper part of the abdomen. The diagnosis was acute cholecystitis.

The urine had a specific gravity of 1.005, was clear and had an acid reaction. It was free of albumin and sugar. The blood count showed a hemoglobin of 75%; 3,820,000 red blood cells per cubic mm. and 26,500 white blood cells per cubic mm. The differential count was 93% polymorphonuclear neutrophiles, 3% small lymphocytes and 4% transitional cells.

At operation the omentum was edematous and in places attached to the liver by fine fibrinous adhesions. The gall bladder was covered with a

shaggy coat of fibrin and was tense. A trocar was introduced into the gall bladder and 100 cc. of yellow pus was evacuated by suction. Even after emptying the gall bladder failed to collapse because of marked thickening of its wall. A drain (No. 20 catheter) was sewed into the gall bladder and the abdominal wound was closed in layers. Before completion of the operation considerable dark yellow bile escaped through the drain tube. The patient's temperature was 101.6° on the day of operation and by the second day thereafter it dropped to 98° and remained normal. Recovery progressed uneventfully until the 12th post-operative day when the patient suddenly expired. The results of the autopsy disclosed the following:

Autopsy Report. — This is the body of a white woman about 56 years old, weighing about 160 lbs. and about 5 feet 3 inches tall. The scalp hair is silvery white and the eyes blue. The features are regular and body nourishment is good to the point of slight obesity. The abdomen is especially fatty and the thighs are large.

The fat of the front vertical midline incision is 16 cm. thick and in large pale lobules. There is a recent operative wound 12 cm. long, 4 cm. to the right of the midline and with its upper end at the rib margin. The edges of this wound are healed except in a place 8 mm. vertically and 4 across, 2 cm. from the distal end. In the opening is a little thick green pus. Continued inward the opening connects with a fistulous tract which traverses the subcutaneous fat, a roll of omentum and finally enters the fundus of the gall bladder in front. In the bladder is an opening 8 mm. in diameter and at one edge of this is a catgut ligature embedded in the muscle. The gall bladder is fibrous and from 4 to 6 mm. thick. The bladder has a total length of 11 cm. and is 3.2 cm. across at the fundus. It describes an "S"-shaped kink at the neck before joining the cystic duct. In the middle portion of the "S" the lumen is blocked by a gallstone 11 mm. long and 7 in diameter. This is firm and dark green except for one place about 4 mm. in diameter where it has a glistening yellow incrustation of cholesterol crystals. The gall bladder lining is dull red and coated with thin mucus in which are flecks of pus. The front edge of the liver is 6 cm. uniformly beneath the costal margin.

The coils of the large bowel are distended with gas and up to 11 cm. in diameter. The appendix is retrocecal and about 15 cm. long. It has a right angle kink 4 cm. from its tip and the wall is fibrous. The small bowel is from 2.5 cm. to 4 cm. in diameter. Its serosa is smooth and its wall is unaltered. The stomach contains about 75 cc. of thick green liquid resembling mucus mixed with bile. The pancreas is flat and 18 cm. long. There is a heavy ingrowth of fat near its periphery. The pancreatic duct is normally thin and its lining is gray and smooth. The spleen weighs 170 grams and its capsule is wrinkled and gray purple. The pulp is soft and the Malpighian bodies are not distinct.

Both fallopian tubes are patent but are firmly bound to the back of the broad ligament on each side. The ovaries are atrophic and each is only about 22 mm. by 12 by 8. The uterus is firm and about 8 cm. long. Its wall is fibrous and the arteries in it stand out on surfaces made by cutting. The endometrium is thin and pale yellow pink. The lining of the urinary bladder is dull red from hypostasis. The rugae are coarse. The openings of the ureters are the usual narrow slits.

The kidneys are firm and red brown. The cortex of each contain shallow fetal-lobation markings. The cortex of each kidney is 8 mm. wide and is clearly demarcated from the underlying medulla. The lining of the renal pelves, calyces and ureters is smooth and gray. The right kidney weighs 190 grams the left 170. The supra-renal glands are well provided with lipoid material and the medullas are smooth and gray.

The lining of the inferior vena-cava is pale gray blue and smooth. At the junction with the right common iliac vein the lumen contains a mottled red gray clot 5 mm. in diameter and 12 long. This is free in the lumen and is so close to the bifuracation of the vena-cava that its exact origin in the extremities cannot be determined. The lining of the aorta is changed about 40% by fat in the abdominal part but only about 20% in the thoracic region. In the pulmonary artery is a large fresh clot plugging the lumen for 2 cm. as well as entirely closing both main branches. About two-thirds of this clot is dull red and recent. The rest of the clot is a tangle of the same caliber as the small piece noted in the inferior vena-cava. There is a similar small

clot in the branch of the second order of the right pulmonary artery. The front two-thirds of both lungs is hypercrepitant and the rest is normally crepitant. The right lung weighs 360 grams and the left 320. On surfaces made by cutting, both lungs are gray-pink and the bronchi are not obstructed.

The heart sac contains only about 20 cc. of clear yellow liquid. The heart chambers contain only a few soft red clots. The empty heart weighs 380 grams. The fat on its front surface is up to 15 mm. thick and the branches of the coronary arteries are changed only about 5% by fatty patches. In the front wall of the left ventricle there is a heavy ingrowth of fat in a band about 8 mm. wide and 22 vertically. The measurements of the heart valve rings are as follows: aortic 7.2 cm.; pulmonic 8.2 cm.; mitral 10.4 and tricuspid 12.8 cm.

Anatomic Diagnosis:

1. Recent Cholecystostomy.
2. Draining fistulous tract between the skin and gall bladder.
3. Chronic Cholecystitis.
4. Stone impacted in the gall bladder neck.
5. Pulmonary embolism (complete obstruction of the pulmonary artery and its two branches).
6. Acute pulmonary emphysema.
7. Moderate senile arteriosclerosis.
8. Senile atrophy of the ovaries.

Histology: In the frozen sections stained with H & E — Spleen — There is marked hyperemia of the spleen. The sinusoids are hugely engorged with red blood cells and the Malpighian bodies are distinct and separated from one another by broad bands of bloody tissue. The central arteries of the corpuscles have a marked increase of the fibrous tissue of their walls and the lumens are narrowed. The trabeculae are thickened and hyalinized. Pancreas — The pancreatic acini are distinct and between them close to some of the smaller ducts are thin ingrowths of fibrous tissue. Near the periphery there is a moderate fatty infiltration. Heart — The heart muscle fibers are well defined although slightly swollen. There is a thin peripheral fatty ingrowth from the epicardium especially along the coarse of the main coronary arteries. Kidney — The kidney glomeruli are distinct and there are few of them with a wide Bowman's space. There is marked hyperemia at the junction of cortex and medulla and in a few places there are recent hemorrhages. The medium sized arteries are thick walled and most of the thickening is in the media. Some of them have a reduplication of the internal elastic lamella which is suggestive of changes noted in hypertension. Liver — The liver cord cells are poorly defined, in some places this is due to compression by the dilated sinusoids, and central veins. In the cells surrounding the central veins and as far removed as 8 to 10 cells, there are collections of hemosiderin characteristic of a long standing passive hyperemia. Blood clot — A portion of blood clot is laminated and the peripheral layers are mostly white blood cells and fibrin. The central part is composed of red blood cells. Lung — About one-third of the pulmonary alveoli are elongated and compressed. About 40% are dilated and of these about 5% contain remnants of alveolar walls. There is moderate coal pigmentation throughout the lung and there is a generalized distention of the large veins. In a few places there are small hemorrhages into the alveolar walls. Supra-renal glands — The supra-renal glands are unaltered except by hyperemia in the medulla. Uterus — The uterus contains moderate fibrous changes throughout its wall. The arteries are thick walled and have narrow lumens. The endometrium is atrophic and its glands occur at wide intervals.

DISCUSSION

Since its foundation the Loretto Hospital has had eight cases of pulmonary embolism which proved fatal. Statistical analyses based on the wide experience of the Mayo Clinic has revealed the following:

"Venous thrombosis and pulmonary embolism following surgical procedures are still the 'bugbears' of surgery. Every surgeon no matter how skillful and no matter how trivial a procedure he may perform, may to his amazement some day be confronted with a sudden exitus of the patient which seems incomprehensible to him and more so to the immediate family.

I — Incidence in various types of operations: In this series during a thirteen year period the total number of the cases of thrombosis with or without embolism and of embolism with or without evidence of other thrombosis was 1,665 and the total number of patients having operation was 172,888, making an

incidence of .96% for all thrombosis and embolism; 0.52% for pulmonary embolism and 0.20% for fatal pulmonary embolism.

Venous thrombosis and pulmonary embolism are relatively *twice* as common following laparotomy as they are following all operations and they are *three* times as common following laparotomy in which operations on the female pelvic organs were done as they are following all operations. The highest incidence of venous thrombosis and pulmonary embolism occurs in operations where there is laparotomy and extensive resection of tissue. These are operations which can be considered to be of relatively long duration and of relatively great magnitude. The incidence of venous thrombosis and pulmonary embolism is approximately *twice* as great in cases of repair of bilateral femoral or inguinal hernia as in cases of unilateral femoral or inguinal hernia. Here the difference is only that of magnitude and duration of operation.

Simple exploratory laparotomy for an inoperable malignant lesion, an operation of relatively short duration and small magnitude, carries a high incidence of venous thrombosis and pulmonary embolism, particularly the latter.

Resection of the stomach and resection of the intestines frequently done for carcinoma are also operations with relatively high incidence of venous thrombosis and pulmonary embolism. It is suggested that where carcinoma is present, there be some increased predisposition to postoperative venous thrombosis and pulmonary embolism.

It has been suggested that the incidence of thrombosis and embolism is greater in cases in which *fever* and *infection* exist, either before the operation is performed or during convalescence. The incidence of venous thrombosis and pulmonary embolism following appendectomy for ruptured appendix is more than twice as great as that following appendectomy for chronic or subacute appendicitis. Since the operations are approximately of the same magnitude, the only additional factor in the ruptured appendix would seem to be the presence of infection. The incidence of venous thrombosis and pulmonary embolism is also high following splenectomy. Since splenectomy is performed as a treatment for certain blood dyscrasias it may be followed by marked changes in certain elements of the blood and these changes may be an important factor in the development of the post-operative thrombosis and embolism.

II — Predisposing Factors: Some of the predisposing factors have already been alluded to, such as the presence of carcinoma, infections and blood dyscrasias.

In this large series the relative incidence of all thrombosis and embolism was greater in women than in men and this was particularly true of clinically diagnosed thrombo-phlebitis, in which the ratio was roughly 3 to 2. The incidence of pulmonary embolism both fatal and non-fatal was greater in men. The age distribution; the youngest was ten years of age and the oldest was eighty-eight. *Post operative* venous thrombosis and pulmonary embolism are quite rare in patients less than 20 years of age. More than 50% of the cases occurring in men are found in patients between the ages of fifty and sixty-nine years and more than 60% of the cases in women are found in patients between the ages of 40-59 years, thus these complications are seen among women at slightly earlier ages.

The incidence of post-operative venous thrombosis and embolism with regard to age in patients having abdominal hysterectomy and operations on the intestines, is definitely greater in patients over 50 years of age and more, than in those less than fifty years of age.

As regards the various types of disease which might act as predisposing factors a significant percentage of the total group was found to have cardiac disease, disease of the peripheral veins, blood disease carcinoma or severe infections; more than a third of the total group had none of the predisposing conditions. Cardiac disease, carcinoma and severe injections were found definitely more commonly in the men, whereas diseases of the peripheral veins and of the blood were found definitely more commonly in women.

Obesity of the patient definitely although not markedly predisposes to venous thrombosis and pulmonary embolism.

The post-operative venous thrombosis and pulmonary embolism have occurred following all types of anaesthesia but there has been no preponderance of incidence where any certain anaesthetic was used.

No significant differences were noted as to the months of the year except for a slightly increased incidence in January and decreased incidence in July to December.

III — Time of Occurrence During the Post-operative Period: Of the total number (1665), 1260 cases had venous thrombosis and of these, 938 were diagnosed clinically as thrombo-phlebitis. In some cases thrombo-phlebitis occurred as early as on the second post-operative day and as late as on the one-hundred and fifteenth day. The mean was the twelfth day. In about one-fourth of the cases the complication occurred during the first eight days, from the 9th to the 14th day, in approximately one-half the cases, and after the 14th day in approximately one-fourth of the cases. Thrombo-phlebitis was noted only rarely during the first four days. It is known that thrombosis may be present for some time before clincial signs and symptoms appear and permit the diagnosis to be made, although it is generally considered that the clinical phenomena appears within a few hours after the thrombus actually forms in most cases.

Of the 938 cases of clinically diagnosed thrombophlebitis, 95 or 10.4%, had two or more distinct episodes. In approximately one-third of the cases the interval between the first and the last episode was less than 4 days, in approximately one-third it was 4 to 9 days and in approximately one-third it was 10 days or more.

In approximately one-fourth of all the cases the embolism occurred before the 7th post-operative day; in approximately one-half of the cases, from the 7 to the 14 day; in approximately a one-fourth of the cases after the 14th day. This is also true of the group in which fatal embolism occurred. The earliest fatal embolism occurred on the first post-operative day; the latest on the 58th. Of the 897 cases of pulmonary embolism, fatal and non-fatal, multiple distinct episodes of embolism were diagnosed in 20% or 23%. The interval of time between the first and the last episode was less than 4 days in approximately one-half of the cases and less than 10 days in approximately four-fifths of the cases. Also of all the cases of embolism occurring in multiple episodes approximately 60% terminates with fatal embolism.

Of the 897 cases of pulmonary embolism 219 cases or 24.4%, the first episode was fatal. Of all the cases of fatal embolism (343) in 124 or 36% of cases, the fatal embolism was preceded by one or more episodes of non-fatal embolism. Of the 897 cases of embolism, both fatal and non-fatal, in 678 or 75.6% a non-fatal embolism was the first episode or only the episode. Of these 678, in 207 cases, or 30.3%, there were one or more subsequent attacks of embolism, and in 124 or 18.3% of the total number in which a non-fatal embolism was the first or only episode, subsequent fatal embolism developed. In 471 cases, or 52.5% of the total (897), there was only one episode of embolism and this was not fatal. In 90 of these, subsequent thrombosis without embolism developed.

On the basis of above data the following probabilities from the standpoint of clinical diagnosis can be stated: (1) If a patient who has had an operation has non-fatal pulmonary embolism, he has slightly less than one chance in five of subsequent fatal pulmonary embolism. (2) About three chances in 10 of subsequent embolism, fatal or non-fatal and slightly less than one chance in five of subsequent fatal pulquent thrombotic or embolic episode. If all fatal embolisms which were preceded by a clinically diagnosed non-fatal embolism could be prevented, the total number of the fatal embolisms would be reduced by more than a third.

IV-Location of Thrombosis: Of the 1665 cases studied, 405 (or 24.3%) had pulmonary embolism without clinical evidence or findings at necropsy of venous thrombosis. In as much as the emboli found in the pulmonary arteries in cases which came to autopsy, were large and in nearly all cases appeared to have come from the large veins, it is assumed, that the entire thrombus detached itself and became an embolus, leaving no clue to its source. In the remaining 1260 cases (1665-405) venous thrombosis was found in 1401 locations. It is noteworthy that post-operative venous thrombosis occurred rarely in the head, neck and upper extremities and that more than 85% of the locations were in the lower extremities. Most of the intra-abdominal venous thromboses were found in the pelvic veins in women, the prostatic veins in men, and in the mesenteric, portal and splenic veins.

V-Studies on the rate of venous blood flow and its relation to post-operative venous thrombosis and pulmonary embolism: L. A. Smith and E. V. Allen have recently made some very interesting observations on the venous blood flow in the upper and lower extremities by the Sodium cyanide method. In the course of their study it soon became apparent that the most important influence on the circulation time was the temperature of the skin of the extremities. Speed of blood flow from an extremity to the carotid sinus is decreased when the skin of the extremity is cool and increased when it is warm.

VI-Pulmonary Embolism: Regardless of whether vasodilatation is produced reflexly by heat, by direct application of heat, by ingestion of alcohol or by sympathectomy, the speed of blood flow depends on the temperature of the skin. The minutes of rapid active movement of the leg while the person lay in supine position invariably increased the speed of flow, whereas such exercise of the arm did not do so. Elevation to a 30 degree angle of extremities of supine subjects invariably decreased circulation time (increased blood flow). Sympathectomy decreased circulation time. Administration of Strychnine sulphate decreased the foot-carotid circulation time in some instances.

There is a definite decrease of the average foot carotid circulation time during the few hours after operation. Two days after operation the average foot—to—carotid circulation time is greater than the preoperative average. Beginning about the 5th day after operation foot carotid circulation time increased (blood slowed), gradually to a value which at the 10th post-operative was approximately 50% greater than the preoperative average.

In 1927 William Walters suggested the use of thyroid extract in an attempt to prevent post-operative slowing which he assumed to be present. By this method he was able to reduce the incidence of fatal pulmonay embolism.

"It seems more than a coincidence that the period of maximal slowing of venous circulation in the legs corresponds to the period in which phlebitis and pulmonary embolism occur most commonly. The source of most emboli after operation is from the lower extremities. Certainly that is where phlebitis occurs almost solely after operation. Authors do not believe that slowed venous circulation is the sole cause of post-operative thrombosis but it may be a very important one."

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

At the annual meeting of the Chicago Dermatological Society, held January 20, 1943, the following officers were elected: President, Dr. Michael H. Ebert; Vice-President, Dr. F. W. Lynch of St. Paul, Minnesota; Secretary-Treasurer, Dr. Marcus R. Caro.

At the November meeting of the Chicago Urological Society, Dr. Russell D. Herrold was elected Secretary-Treasurer, to take the place of Dr. Irving J. Shapiro who is in active service with the Navy.

In the first "V Mail" received by the Illinois Medical Journal, Captain Kenneth L. Matson M.C. writes, "Thank you so much for the Journal. Would appreciate having you correct my mailing address to the A.P.O. listed above. Even though we may leave our present location of England, I believe the above address will avoid delay."

Lieutenant Hanford L. Auten of the School of Aviation Medicine, Randolph Field, Texas writes the Journal as follows, "The last issue was very good and your proof reader isn't missing so many."

The Senate has confirmed the appointment of Dr. Paul C. Barton, Director of the Bureau of Investigation of the American Medical Association, as assistant director for Procurement and Assignment Service in the Bureau of Placement of the War Manpower Commission, it was announced in Washington, D. C. on February 16th. Dr. Barton has been with the American Medical Association eight years and for the past four years has been head of the Bureau of Investigation.

Dr. Richard J. Bennett, Jr. has been appointed as Chief Surgeon, Chicago District, Carnegie-Illinois Steel Corporation. He succeeds Dr. Philip H. Kreuscher who is retiring to devote his entire time to his private interests. Dr. Bennett has been connected with this United States Steel Corporation subsidiary since January 1, 1937 when he was appointed Associate Chief Surgeon. He is a member of the staffs of the Wesley Memorial and Little Company of Mary Hospitals, the American, the Illinois State, and Chicago Medical Associations, and a Fellow of the American College of Surgeons. In 1940 he was granted a certificate of qualification by the American Board of Surgery.

Dr. Nita M. Arnold, former Chicago psychiatrist, is a contract surgeon with the rank of first lieutenant at the First WAAC Training Center, Fort Des Moines, Iowa. She is under contract with the Surgeon General of the Army. Dr. Arnold was born in Buenos Aires, Argentina in 1898 and graduated at the Friedrich-Wilhelms-Universitat Medizinische Fakulat, Berlin, Prussia, in 1930.

The Institute of Medicine of Chicago announces that the Joseph A. Capps Prize for Medical Research for 1942 has been awarded to Dr. Mary E. Martin, who graduated at Northwestern University Medical School in 1941, for her investigation on "Distribution of Nerves in

the Adult Human Myometrium." The prize is awarded annually to a young graduate of a Chicago medical school for the most meritorious investigation in medicine or in the specialties of medicine.

The Livingston County Medical Society met on February 18th at the Livingston County Sanatorium, Pontiac. I. A. Abt, M.D., Professor of Pediatrics, Northwestern University, author of "Yearbook on Pediatrics" and internationally famous clinician, was the principal speaker. He was introduced by Dr. J. D. Scouller who also introduced him fifteen years ago this month when Dr. Abt spoke before the local Parent Teacher Association." The topic of the evening was "Sulfa Drugs in the Treatment of Children."

COMING MEETINGS

May 18, 19, 20 — ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY, Palmer House, Chicago.

March 2 — Williamson County Medical Society, Herrin, Evening, Max Hirschfelder, M. D. — "Advances in the Diagnosis and Treatment of Ocular Conditions During Recent Years"

March 3 — Hospital Staff, Beardstown, Evening, Mary Louise Newman, M. D. "Use of Vitamin K in Obstetrics"

March 5 — Will-Grundy County Medical Society, Louis Joliet Hotel, Noon — Edward L. Compere — "Kenny Treatment of Infantile Paralysis"

March 9 — Kankakee County Medical Society — Club Rooms, Kankakee, Noon — Albert VanderKloot, "The Anemias"

March 9 — McLean County Medical Society — Bloomington — Evening

March 11 — LaSalle County Medical Society — Kaskaskia Hotel, LaSalle, Dinner at 6:30 — A. VerBrugghen, M. D. "Herniated Nucleus Pulposus"

March 12 — Jersey-Greene County Medical Society — Evening

March 17 — DuPage County Medical Society — Elmhurst Community Hospital, Elmhurst — Dinner 6:30 — Paul H. Holinger, M. D. — "Bronchoscopy in Diseases of the Respiratory Tract, Illustrated with Kodachrome Motion Pictures"

March 19 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet, Noon, Harry L. Huber, M. D. — "Problems in Allergy"

March 23 — Macoupin County Medical Society — Carlinville — 6:30 P. M.

March 26 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet, Noon, William B. Serbin, M. D. — "Obstetrics"

April 6 — Williamson County Medical Society — Herrin, Evening

April 8 — LaSalle & Bureau County Societies — LaSalle — Evening

April 13 — Kankakee County Medical Society — Kankakee, Club Rooms, Noon, Frank F. Maple — "Obstetrics"

MARRIAGES

FRANK J. CERNY, Berwyn, Ill., to Miss Viola McNeel in Chicago, November 8.

DALE A. ROLD to Miss Mary Louise Stropes, both of Chicago, December 23.

DEATHS

ALBERT G. ASCHAUER, Springfield; University of Illinois College of Medicine, 1909. Veteran of World War 1 and ophthalmalogist in Springfield for 25 years. Died February 19, 1943 at the age of 64.

ALEXANDER A. BACKIEL, Chicago Heights; Chicago Medical School, 1928. Was medical officer for Selective Service Board 96. Died February 1, 1943 at the age of 43.

CAPTAIN JOHN P. BOLAND, Camp Jackson, South Carolina, formerly of Chicago; Rush Medical College, 1928. Died recently at the age of 41.

JOHN V. DILLMAN, Louisville; Missouri Medical College, St. Louis, Missouri, 1899. Died February 12, 1943 at the age of 73 years.

CORNELIUS J. DONOVAN, Lovington; St. Louis College of Physicians and Surgeons, 1893. Had practiced medicine fifty years. Died January 29, 1943 at the age of 72.

ALONZO GLASS, Creal Springs; Marion-Sims College of Medicine, St. Louis, Missouri, 1897. Died January 16, 1943 at the age of 83.

FANNIE LANHAM, Chicago; Chicago College of Medicine and Surgery, 1913. Former physician and surgeon at the Women's and Children's Hospital in Chicago and one of the first woman physicians of the State. Died January 27, 1943 at the age of 75.

ALBERT N. MACKEY, Aledo; Bellevue Medical College, New York City, 1893. In World War 1, served as a First Lieutenant. Was Secretary of Mercer County Medical Society for many years. Died of a heart attack on February 11, 1943 at the age of 80.

SYDNEY C. MOORE, Benton; Loyola University School of Medicine, 1921. In World War 1 he enlisted in the U. S. Medical Corps, serving in the Intelligence Department. Died January 30, 1943 at the age of 54.

FREDERICK J. RATHBUN, New Windsor; Rush Medical College, 1913. Past president of the Mercer County Medical Society and had served for several years on the Mercer County Tuberculosis Board of Control. Died January 28, 1943 at the age of 55 after an illness of a week.

ALBERT E. SWARTZ, Chicago; University of Illinois College of Physicians and Surgeons, 1895. Had practiced medicine in Chicago for forty years. Died February 4, 1943 at the age of 67.

WALTER R. TITZEL, Chicago; Chicago Homeopathic Medical College, 1888. Member of the Chicago Medical Society for fifty years. Died from a heart ailment January 27, 1943 at the age of 77.

FREDERICK GEORGE VOGEL, Waterloo; St. Louis University School of Medicine, 1906. Died following an extended illness on January 30, 1943 at the age of 54.

CARL B. WAGNER, Chicago; Illinois Medical College, 1909. Practiced medicine in Chicago nearly forty years. Died February 1, 1943 at the age of 66.

THOMAS H. WAGNER, Joliet; Northwestern University Medical School, 1898. For many years surgeon for the American Steel and Wire Company and the Rock Island Railroad. Chief of Staff of St. Joseph's Hospital, Joliet. Died January 18, 1943 at the age of 68.

JOHN T. WELCH, Chicago; Chicago Homeopathic Medical College, 1901. Practiced in Hyde Park for 40 years. Died February 6, 1943 at the age of 77.

KATHARINE WOLTMANN, Delavan; The Hahnemann Medical College and Hospital, 1904. Died January 12, 1943 at the age of 81.

EDC CAMPAIGN

The EDC — Early Diagnosis Campaign — is an educational campaign conducted one month out of each year. It is one part of the balanced tuberculosis and health education program carried on by the National Tuberculosis Association and its affiliated associations. There is no single procedure which will assure victory in the campaign against tuberculosis. Many services and activities have to be created and coordinated in this campaign.

In the tuberculosis program, Health Education goes on all year long. The year-round effort aims to teach people ALL the facts about tuberculosis which the public should know. The EDC, however, teaches only ONE specific fact or group of facts, namely, the current EDC theme. The campaign theme selected by a committee representing all parts of the nation, is applicable to any community. The EDC is the time when all tuberculosis associations are doing the same thing at the same time. Unity of purpose is what makes the EDC a powerful educational influence.

The Theme for the 1943 Early Diagnosis Campaign IS —

FOLLOW THE EXAMPLE OF THE ARMED FORCES — GET A CHEST X-RAY.

HEREDITY AND CANCER

(Jas. Ewing, New York City, in *Bul. Amer. Soc. for the Control of Cancer*, Aug.)

Daughters of mothers who had cancer of the breast are more likely to develop this disease than the average woman. The hereditary tendency to cancer affects, not the body as whole, but only the particular organ (breast, uterus); or the particular system, as the skin or the mucous membranes lining the gastrointestinal tract, in which the cancer in question had occurred. Thus cancer of the breast in one person indicates an increased tendency to cancer of that organ in the mothers and sisters, but has no relation to cancer of any other organ.

When cancer of the breast occurs in one member of the family the sisters in that family are more prone to develop cancer of the breast than is the average woman (in the proportion of about 4 to 1); and the same rule may be stated for cancer of the uterus, but less definitely.

The best example of a hereditary cancer is glioma of the retina. This disease occurs in infants, chiefly before the 4th year, and most of the children in the family are affected — in one recorded instance 10 of 16 children, and in another all of 8 children.

Hereditary susceptibility is probably an essential condition in the occurrence of all tumors. The disease itself is not transmitted, but only the tendency. These tumors are not preventable but they may be detected early and often cured.

P. R. N.

The Jocular Jingles of C. G. F.

by

Charles G. Farnum M. D.

Peoria, Ill.

SEASONABLE SONNETS

MARCH

With boistrous, roaring, howling, freezing days
All interspersed with balmy gladsome ones,
The month of March pursues tempestuous ways
Through which despair or hope alternate runs.
In ancient times it had its fatal Ides,
In modern times it has St. Patrick's day,
In casualties of each quite coincides —
In keeping with the month we act that way.
In March comes Lent; we penitently learn
How deep the groove of habit has been worn;
When over, ancient habits all return,
Yet abnegation seems a thing inborn.
If maniac or depressive signs appear
Just blame it on this crazy time of year.

COLOR BLIND

I gaze upon the sunset's glow
Of gorgeous hues that all remind
That I should be a thankful soul,
I am not color blind.
I see bright flowers and birds and trees
Of every color, size and kind,
And offer up a grateful prayer,
I am not color blind.

L'Envoi

I look at women's painted lips,
At cheeks and nails and find
That after all it might help some
If I *were* color blind.

I love the hippopotamus
He's shaped so much like me
And like the hippopotamus
I cannot climb a tree,
And yet I laugh with glee, sir,
At human shapes I see;
I think those awful skinny ones
Are worse a lot than we.

HER LUGGAGE

She can pack all her luggage completely,
And each time her skill seems to increase,
It's a task done so deftly and neatly
There is never a wrinkle or crease.
And each bag is so swank and artistic
That she walks with the haughtiest stride,
In their fashions and styles modernistic
They are objects of justified pride.
Yet there's always one minor deflection,
It is there without question or doubt,
When the red-cap walks down to her section,
There is always a string hanging out.

PATHOLOGICAL SONNETS

ASTHMA

I wake from troubled sleep in wildest fright,
In dread and panic gasp and try to breathe,
I stifle, choke and smother in my plight,
And terrorizing fears within me seethe.
For countless hours I strain and cough and wheeze,
In apprehension struggle and protest,
I'm in despair for nothing will appease
These vicious demons gripping at my chest.
The long gaunt arm of heritage can reach
From out the past to strangle and oppress;
I hoarsely damn allergic forbears each,
As I, dyspnoeic, suffers such distress.
Throughout an endless night I fight for breath
Regretting asthma rarely causes death.

Sophistes the Seer sayeth, "Prate not against changing things. It was Aristotle who asserted that there is nothing permanent but change and nothing certain but that everything is uncertain."

TANTALUM FOR REPAIRING SKULL DEFECTS

Experimental studies indicate that the metal tantalum is a satisfactory material for the repair of defects of the skull, Lieut. (j. g.) Robert H. Pudenz, Medical Corps, U. S. Naval Reserve, reports in *The Journal of the American Medical Association* for February 13.

Tantalum is an element, the seventy-third in the periodic table. It is a bluish white metal resembling steel in its physical properties and glass in its chemical characteristics. It has an atomic weight about three times that of iron.

Lieutenant Pudenz says that "It has the desirable qualities of noncorrosiveness, inertness in tissue, nonabsorbability, absence of toxic (poisonous) ingredients and malleability. This last quality enables the surgeon to form the flat tantalum sheet to the desired contour at the operating table. In view of these characteristics, the use of this metal should be considered in the repair of many of the cranial defects which will inevitably occur as a result of craniocerebral (skull and brain) injury in the present war, and particularly in those repairs in which a satisfactory cosmetic result is of utmost importance."